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Prep Standard - Chemical Standard Summary

Order ID : Q3834

Test : SVOC-TCL BNA -20

Prepbatch ID : PB170902,

Sequence ID/Qc Batch ID: BG121125,bg121125,Bp121125,

Standard ID :
EP2659,EP2665,SP6856,SP6860,SP6875,SP6909,SP6910,SP6911,SP6912,SP6913,SP6914,SP6915,SP6916,SP6917,SP6918,SP6927,SP6928,SP6937,

Chemical ID :
10ul/1000ul sample,E3875,E3951,E3954,E3973,E3980,E3982,E3986,E3987,S11485,S11653,S11791,S11807,S12197,S12201,S12202,S12203,S12204,S12220,S12245,S12246,S12306,S12307,S12309,S12564,S12565,S12566,S12567,S12568,S12577,S12739,S12740,S12776,S12777,S12905,S12906,S12907,S12908,S12909,S13122,S13123,S13124,S13125,S13126,S13150,S13161,S13170,S13182,S13183,S13186,S13202,S13207,S13214,S13215,S13232,S13233,S13249,S13250,S13251,S13252,S13253,S13254,S13255,S13256,S13257,S13270,S13271,S13272,S13299,S13300,S13301,S13302,S13303,S13304,S13305,S13306,S13307,

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Extractions STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
2017	1:1 ACETONE/METHYLENE CHLORIDE	EP2659	11/03/2025	04/16/2026	RUPESHKUMAR SHAH	None	None	Riteshkumar Patel 11/03/2025

FROM 8000.00000ml of E3980 + 8000.00000ml of E3982 = Final Quantity: 16000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3923	Baked Sodium Sulfate	EP2665	12/05/2025	06/05/2026	RUPESHKUMAR SHAH	Extraction_SCALE_2 (EX-SC-2)	None	Riteshkumar Patel 12/05/2025

FROM 4000.00000gram of E3875 = Final Quantity: 4000.000 gram

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4215	New 8270E/625.1 ICAL Stock Solution 100 ng	SP6856	08/12/2025	12/16/2025	Jagrut Upadhyay	None	None	mohammad ahmed 08/22/2025

FROM 0.04000ml of S13207 + 0.20000ml of S12197 + 0.30000ml of S12306 + 0.40000ml of S12220 + 0.50000ml of S11807 + 0.50000ml of S12245 + 0.50000ml of S12776 + 0.50000ml of S13214 + 0.50000ml of S13233 + 0.70000ml of S12307 + 1.00000ml of S12739 + 4.86000ml of E3954 = Final Quantity: 10.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4219	40ng ICC	SP6860	08/12/2025	12/16/2025	Jagrut Upadhyay	None	None	mohammad ahmed 08/22/2025

FROM 0.01000ml of S13170 + 0.60000ml of E3954 + 0.40000ml of SP6856 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
3895	50 ug/ml DFTPP 8270E	SP6875	09/30/2025	03/30/2026	Rahul Chavli	None	None	Jagrut Upadhyay 09/30/2025

FROM 1.00000ml of S12577 + 19.00000ml of E3973 = Final Quantity: 20.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4215	New 8270E/625.1 ICAL Stock Solution 100 ng	SP6909	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.04000ml of S13207 + 0.05000ml of S13232 + 0.15000ml of S13214 + 0.20000ml of S12201 + 0.35000ml of S13215 + 0.40000ml of S12905 + 0.45000ml of S13233 + 0.50000ml of S12246 + 0.50000ml of S12777 + 0.50000ml of S13122 + 1.00000ml of S12309 + 1.00000ml of S12740 + 4.86000ml of E3980 = Final Quantity: 10.000 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4216	80ng ICC	SP6910	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.20000ml of E3980 + 0.80000ml of SP6909 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4217	60ng ICC	SP6911	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.40000ml of E3980 + 0.60000ml of SP6909 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4222	5ng ICC	SP6912	11/11/2025	12/16/2025	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.87500ml of E3980 + 0.12500ml of SP6860 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4219	40ng ICC	SP6913	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.60000ml of E3980 + 0.40000ml of SP6909 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4220	20ng ICC	SP6914	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.80000ml of E3980 + 0.20000ml of SP6909 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4221	10ng ICC	SP6915	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.75000ml of E3980 + 0.25000ml of SP6913 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4222	5ng ICC	SP6916	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.87500ml of E3980 + 0.12500ml of SP6913 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
4223	2.5ng ICC	SP6917	11/11/2025	01/31/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 0.01000ml of S13182 + 0.50000ml of E3980 + 0.50000ml of SP6916 = Final Quantity: 1.010 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
19	8270/CLP Surrogate Solution, 100 PPM BN/150 PPM ACID	SP6918	11/13/2025	03/22/2026	Jagrut Upadhyay	None	None	mohammad ahmed 11/13/2025

FROM 1.50000ml of S12905 + 2.00000ml of S12909 + 4.00000ml of S12201 + 5.50000ml of S12202 + 5.50000ml of S12203 + 5.50000ml of S12906 + 5.50000ml of S12907 + 5.50000ml of S12908 + 965.00000ml of E3982 = Final Quantity: 1000.000 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
18	Second Source Calibration Stock Standard, 100 PPM, (8270/625/CLP)	SP6927	11/18/2025	04/16/2026	Jagrut Upadhyay	None	None	Sohil Jodhani 12/08/2025

FROM 0.04000ml of S12204 + 0.08000ml of S12909 + 0.10000ml of S11791 + 0.20000ml of S12564 + 0.20000ml of S13249 + 0.20000ml of S13299 + 1.18000ml of E3986 = Final Quantity: 2.000 ml

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SVOC STANDARD PREPARATION LOG

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
416	40 ng BNA ICV, 40 PPM	SP6928	11/18/2025	04/16/2026	Jagrut Upadhyay	None	None	Sohil Jodhani 12/08/2025

FROM 0.01000ml of S13183 + 0.60000ml of E3986 + 0.40000ml of SP6927 = Final Quantity: 1.010 ml

Recipe ID	NAME	NO.	Prep Date	Expiration Date	Prepared By	ScaleID	PipetteID	Supervised By
171	8270/625 Spike Solution, 50/100 PPM	SP6937	12/01/2025	04/16/2026	Jagrut Upadhyay	None	None	Sohil Jodhani 12/08/2025

FROM 0.30000ml of S13299 + 0.40000ml of S11485 + 0.40000ml of S11653 + 0.40000ml of S13150 + 0.40000ml of S13161 + 0.40000ml of S13202 + 0.50000ml of S11791 + 0.60000ml of S13123 + 0.60000ml of S13307 + 0.90000ml of S12564 + 0.90000ml of S13257 + 1.30000ml of S12565 + 1.30000ml of S12566 + 1.30000ml of S12567 + 1.30000ml of S12568 + 1.30000ml of S13124 + 1.30000ml of S13125 + 1.30000ml of S13126 + 1.30000ml of S13250 + 1.30000ml of S13251 + 1.30000ml of S13252 + 1.30000ml of S13253 + 1.30000ml of S13254 + 1.30000ml of S13255 + 1.30000ml of S13256 + 1.30000ml of S13270 + 1.30000ml of S13271 + 1.30000ml of S13272 + 1.30000ml of S13300 + 1.30000ml of S13301 + 1.30000ml of S13302 + 1.30000ml of S13303 + 1.30000ml of S13304 + 1.30000ml of S13305 + 1.30000ml of S13306 + 163.00000ml of E3987 = Final Quantity: 200.000 ml

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
PCI Scientific Supply, Inc.	PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1	417203	07/28/2026	07/28/2025 / RUPESH	01/29/2025 / Rajesh	E3875

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-3382-05 / Sand, Purified (cs/4x2.5kg)	25A2756718	12/31/2028	07/09/2025 / RUPESH	04/28/2020 / RUPESH	E3951

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25B1862001	03/19/2026	07/14/2025 / RUPESH	06/11/2025 / RUPESH	E3954

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25C1262005	04/16/2026	09/15/2025 / Riteshkumar	09/15/2025 / Riteshkumar	E3973

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25C1262005	04/16/2026	10/10/2025 / RUPESH	10/10/2025 / RUPESH	E3980

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24L1062001	10/04/2027	10/31/2025 / RUPESH	10/31/2025 / RUPESH	E3982

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L)	25C1262005	04/16/2026	11/14/2025 / RUPESH	11/05/2025 / RUPESH	E3986

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Seidler Chemical	BA-9254-03 / Acetone, Ultra Resi (cs/4x4L)	24L1062001	05/16/2026	11/17/2025 / RUPESH	11/12/2025 / RUPESH	E3987

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555870 / Custom Standard, 2,4-dinitrophenol Std [CS 5328-3]	A0200549	04/16/2026	10/16/2025 / Jagrut	08/10/2023 / yogesh	S11485

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555872 / Custom Standard, pentachlorophenol Std [CS 5328-5]	A0201728	06/01/2026	12/01/2025 / Jagrut	11/09/2023 / Yogesh	S11653

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0196453	05/18/2026	11/18/2025 / Jagrut	11/21/2023 / Rahul	S11791

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0200655	01/01/2026	07/01/2025 / Rahul	11/21/2023 / rahul	S11807

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Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	01/02/2026	07/02/2025 / Jagrut	03/15/2024 / Rahul	S12197

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	03/22/2026	09/22/2025 / Jagrut	03/15/2024 / Rahul	S12201

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	05/13/2026	11/13/2025 / Jagrut	03/15/2024 / Rahul	S12202

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	05/13/2026	11/13/2025 / Jagrut	03/15/2024 / Rahul	S12203

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31087 / Acid Surrogate 10,000ug/ml,methanol,5ml/ ampul	A0206206	05/18/2026	11/18/2025 / Jagrut	03/15/2024 / Rahul	S12204

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0206381	01/02/2026	07/02/2025 / Jagrut	03/15/2024 / Rahul	S12220

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30409 / Pyridine, 2000 PPM in P & T Methanol	A0206650	12/16/2025	06/16/2025 / Jagrut	05/14/2024 / Rahul	S12245

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	30409 / Pyridine, 2000 PPM in P & T Methanol	A0206650	04/08/2026	10/08/2025 / Jagrut	05/14/2024 / Rahul	S12246

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mL	A0206859	01/31/2026	08/12/2025 / Jagrut	05/30/2024 / Rahul	S12306

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mL	A0206859	01/31/2026	08/12/2025 / Jagrut	05/30/2024 / Rahul	S12307

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31902 / CLP/SVOA Additions Mix (Atrazine, Benzaldehyde, Caprolactam) 1000ug/mL	A0206859	01/31/2026	11/07/2025 / Jagrut	05/30/2024 / Rahul	S12309

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	07/31/2026	11/17/2025 / Jagrut	07/23/2024 / RAHUL	S12564

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	06/01/2026	12/01/2025 / Jagrut	07/23/2024 / RAHUL	S12565

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	06/01/2026	12/01/2025 / Jagrut	07/23/2024 / RAHUL	S12566

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	06/01/2026	12/01/2025 / Jagrut	07/23/2024 / RAHUL	S12567

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0214017	06/01/2026	12/01/2025 / Jagrut	07/23/2024 / RAHUL	S12568

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31615 / SV Mixture, GC/MS Tuning Mixture, CH2Cl2, 1mL,	A0212955	06/30/2027	03/31/2025 / Rahul	08/01/2024 / Rahul	S12577

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31900 / SOM01.1 Mega Mix, 500-1000 ug/ml	A0215529	02/12/2026	08/12/2025 / Jagrut	10/08/2024 / anahy	S12739

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31900 / SOM01.1 Mega Mix, 500-1000 ug/ml	A0215529	02/28/2026	11/07/2025 / Jagrut	10/08/2024 / anahy	S12740

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90494 / 1-Methylnaphthalene, 2000 ug/mL, in methylene chloride	061323	02/12/2026	08/12/2025 / Jagrut	11/08/2024 / anahy	S12776

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Absolute Standards, Inc.	90494 / 1-Methylnaphthalene, 2000 ug/mL, in methylene chloride	061323	04/08/2026	10/08/2025 / Jagrut	11/08/2024 / anahy	S12777

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0216785	03/22/2026	09/22/2025 / Jagrut	12/09/2024 / anahy	S12905

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0216785	05/13/2026	11/13/2025 / Jagrut	12/09/2024 / anahy	S12906

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0216785	05/13/2026	11/13/2025 / Jagrut	12/09/2024 / anahy	S12907

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0216785	05/13/2026	11/13/2025 / Jagrut	12/09/2024 / anahy	S12908

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31086 / Base Neutral Surrogate 5000ug/ml,CH2Cl2,5ml	A0216785	05/13/2026	11/13/2025 / Jagrut	12/09/2024 / anahy	S12909

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0218894	04/16/2026	10/16/2025 / Jagrut	05/20/2025 / Rahul	S13122

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0218894	05/17/2026	11/17/2025 / Jagrut	05/20/2025 / Rahul	S13123

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0218894	06/01/2026	12/01/2025 / Jagrut	05/20/2025 / Rahul	S13124

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0218894	06/01/2026	12/01/2025 / Jagrut	05/20/2025 / Rahul	S13125

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31853 / 1,4-Dioxane, 2000 ug/ml , Solvent: Methylene Chloride	A0218894	06/01/2026	12/01/2025 / Jagrut	05/20/2025 / Rahul	S13126

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555869 / Custom Standard, hexachlorocyclopentadiene Std [CS 5328-2]	A0201702	06/01/2026	12/01/2025 / Jagrut	11/13/2023 / Rahul	S13150

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555871 / Custom Standard, 4-nitrophenol Std [CS 5238-4]	A0226283	06/01/2026	12/01/2025 / Jagrut	06/04/2025 / Rahul	S13161

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0224359	02/11/2026	08/11/2025 / Rahul	06/02/2025 / anahy	S13170

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0224359	05/07/2026	11/07/2025 / rahul	06/02/2025 / anahy	S13182

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0224359	05/13/2026	11/13/2025 / rahul	06/02/2025 / anahy	S13183

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31206 / SV Mix, CLP method, Internal Std, 2000ug/mL, CH2Cl2, 1mL	A0224359	06/11/2026	12/11/2025 / rahul	06/02/2025 / anahy	S13186

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555868 / Custom Standard, Benzidine Std [CS 5328-1]	A0226493	06/01/2026	12/01/2025 / Jagrut	06/11/2025 / anahy	S13202

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555868 / Custom Standard, Benzidine Std [CS 5328-1]	A0226493	02/12/2026	08/12/2025 / Jagrut	06/11/2025 / anahy	S13207

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31879 / Benzoic Acid, 2000 µg/mL, Methylene Chloride, 1 mL/ampul	A0221395	02/12/2026	08/12/2025 / Jagrut	07/10/2025 / anahy	S13214

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31879 / Benzoic Acid, 2000 µg/mL, Methylene Chloride, 1 mL/ampul	A0221395	05/07/2026	11/07/2025 / Jagrut	07/10/2025 / anahy	S13215

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	582978 / Custom Calibration Standard - C8 2,000µg/mL, Methylene chloride, 1mL/ampul, Chromatographic, CS-347186	A0228192	05/07/2026	11/07/2025 / Jagrut	08/01/2025 / Rahul	S13232

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	582978 / Custom Calibration Standard - C8 2,000µg/mL, Methylene chloride, 1mL/ampul, Chromatographic, CS-347186	A0228192	02/12/2026	08/12/2025 / Jagrut	08/01/2025 / Rahul	S13233

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	04/27/2026	10/27/2025 / Jagrut	08/06/2025 / Rahul	S13249

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	08/31/2027	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13250

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13251

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13252

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13253

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Fax : 908 789 8922

CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13254

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13255

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13256

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555223 / Custom 8270 Plus Std #1 [2nd lot at $100 per ampul if requested - contact ARM with Request] [CS 4978-1]	A0228451	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13257

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0228494	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13270

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0228494	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13271

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	555224 / Custom 8270 Plus Std #2 [2nd lot at $85 per ampul if requested - contact ARM with Request] [CS 4978-2]	A0228494	06/01/2026	12/01/2025 / Jagrut	08/06/2025 / Rahul	S13272

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	04/27/2026	10/27/2025 / Jagrut	10/15/2025 / rahul	S13299

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13300

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13301

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13302

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13303

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CHEMICAL RECEIPT LOG BOOK

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13304

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13305

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13306

Supplier	ItemCode / ItemName	Lot #	Expiration Date	Date Opened / Opened By	Received Date / Received By	Chemtech Lot #
Restek	31850 / 8270 SV Mix, 8270 Mega Mix 1mL, 1000ug/mL, CH2Cl2 [New Solvent 100% CH2Cl2]	A0229652	06/01/2026	12/01/2025 / Jagrut	10/15/2025 / rahul	S13307

PRODUCTOS QUIMICOS MONTERREY, S.A. DE C.V.

MIRADOR 201, COL. MIRADOR
MONTERREY, N.L. MÉXICO
CP 64070
TEL +52 81 13 52 57 57
www.pqm.com.mx

CERTIFICATE OF ANALYSIS

PRODUCT :	SODIUM SULFATE CRYSTALS ANHYDROUS		
QUALITY :	ACS (CODE **RMB3375)**	FORMULA :	Na_2SO_4
SPECIFICATION NUMBER:	6399	RELEASE DATE:	MAY/23/2024
LOT NUMBER :	417203		

TEST	SPECIFICATIONS	LOT VALUES
Assay (Na_2SO_4)	Min. 99.0%	99.8 %
pH of a 5% solution at 25°C	5.2 - 9.2	6.2
Insoluble matter	Max. 0.01%	0.001 %
Loss on ignition	Max. 0.5%	0.1 %
Chloride (Cl)	Max. 0.001%	<0.001 %
Nitrogen compounds (as N)	Max. 5 ppm	<5 ppm
Phosphate (PO_4)	Max. 0.001%	<0.001 %
Heavy metals (as Pb)	Max. 5 ppm	<5 ppm
Iron (Fe)	Max. 0.001%	<0.001 %
Calcium (Ca)	Max. 0.01%	0.001 %
Magnesium (Mg)	Max. 0.005%	0.001 %
Potassium (K)	Max. 0.008%	0.001 %
Extraction-concentration suitability	Passes test	Passes test
Appearance	Passes test	Passes test
Identification	Passes test	Passes test
Solubility and foreing matter	Passes test	Passes test
Retained on US Standard No. 10 sieve	Max. 1%	0.2 %
Retained on US Standard No. 60 sieve	Min. 94%	96.2 %
Through US Standard No. 60 sieve	Max. 5%	3.5 %
Through US Standard No. 100 sieve	Max. 10%	0.1 %

COMMENTS

QC: PhC Irma Belmares

If you need further details, please call our factory or contact our local distributor.

E 3875

VWR®
BDH® CHEMICALS

Certificate of Analysis

Material	BDH9274-2.5KG
Material Description	BDH SAND STDD OTTAWA W+I 2.5KG
Grade	NOT APPLICABLE
Batch	25A2756718
Reassay Date	12/31/2028
CAS Number	14808-60-7
Molecular Formula	SiO2
Molecular Mass	60.09
Date of Manufacture	12/05/2024
Storage	Room Temperature

Characteristics	Specifications	Measured Values
Appearance	Beige granules.	Beige granules.
Moisture	<= 0.1 %	0.1 %
Particle Size 30-40 mesh	>= 80 %	99 %
CUSTOMER PART # BDH9274-2.5KG		

Received on 7/9/25.

E3951

Internal ID #: 793

Signature	Additional Information
We certify that this batch conforms to the specifications listed above.	Analysis may have been rounded to significant digits in specification limits
This document has been electronically produced and is valid without a signature.	Product meets analytical specifications of the grades listed.
Leona Edwardson, Quality Control Sr. Manager - Solon VWR Chemicals, LLC. 28600 Fountain Parkway, Solon OH 44139 USA	

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor™ | J.T.Baker

Material No.: 9266-A4
Batch No.: 25B1862001
Manufactured Date: 2024-12-18
Expiration Date:2026-03-19
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	2
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	99.9 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.3 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

RS 7/14/25

E3954

JCroak

Jamie Croak
Director Quality Operations, Bioscience Production

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor | J.T.Baker

Material No.: 9266-A4
Batch No.: 25C1262005
Manufactured Date: 2025-01-15
Expiration Date:2026-04-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.1 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

Rec. on 6/10/25 PJ

E3980

Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700
Avantor Performance Materials,LLC
100 Matsonford Rd, Suite 200,Radnor,PA,19087.U.S.A.Phone 610.386.1700

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker

Material No.: 9254-03
Batch No.: 24L1062001
Manufactured Date: 2024-10-04
Expiration Date:2027-10-04
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected forwater)	>= 99.4 %	99.7 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	<= 0.3	0.1
Titrable Base (µeq/g)	<= 0.6	<0.1
Water (H_2O)	<= 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Received on 10/29/25

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3982

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Methylene Chloride
ULTRA RESI-ANALYZED
For Organic Residue Analysis
(dichloromethane)

avantor™ | J.T.Baker

Material No.: 9266-A4
Batch No.: 25C1262005
Manufactured Date: 2025-01-15
Expiration Date:2026-04-16
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1
Assay (CH_2Cl_2) (by GC, exclusive of preservative, corrected for water)	>= 99.8 %	100.0 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.1 ppm
Titrable Acid (µeq/g)	<= 0.3	<0.1
Chloride (Cl)	<= 10 ppm	<5 ppm
Water (by KF, coulometric)	<= 0.02 %	<0.01 %

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Received on 11/5/25

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3986

J Croak

Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Acetone
BAKER RESI-ANALYZED® Reagent
For Organic Residue Analysis

avantor™ | J.T.Baker

Material No.: 9254-03
Batch No.: 24L1062001
Manufactured Date: 2024-10-04
Expiration Date:2027-10-04
Revision No.: 0

Certificate of Analysis

Test	Specification	Result
Assay ($(CH_3)_2CO$) (by GC, corrected forwater)	>= 99.4 %	99.7 %
Color (APHA)	<= 10	5
Residue after Evaporation	<= 1.0 ppm	0.3 ppm
Substances Reducing Permanganate	Passes Test	Passes Test
Titrable Acid (µeq/g)	<= 0.3	0.1
Titrable Base (µeq/g)	<= 0.6	<0.1
Water (H_2O)	<= 0.5 %	0.3 %
FID-Sensitive Impurities (as 2-Octanol)Single Impurity Peak (ng/mL)	<= 5	<1
ECD Sensitive Impurities (as HeptachlorEpoxide) Single Peak (pg/mL)	<= 10	1

For Laboratory,Research,or Manufacturing Use
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Recieved on 11/12/25

Country of Origin: United States
Packaging Site: Phillipsburg Mfg Ctr & DC

E3987

JCroak
Jamie Croak
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

RESTEK

110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric

ilac-MRA A2LA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

S11484 ↓ S11493 Y.P. 08/10/23

Catalog No. : 555870 **Lot No.:** A0200549

Description : Custom 2,4-Dinitrophenol Standard

Custom 2,4-Dinitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	25,008.0 µg/mL	+/- 777.3323

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Tom Suckar - Mix Technician **Date Mixed:** 02-Aug-2023 **Balance:** 1128342314

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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Certificate of Analysis

gravimetric

ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555872 **Lot No.:** A0201728

Description : Custom Pentachlorophenol Standard

Custom Pentachlorophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2026 **Storage:** 10°C or colder

Ship: Ambient

511649 ↓ 511658 Y.P. 11/13/23

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pentachlorophenol	87-86-5	RP230530RSR	99%	25,000.0 µg/mL	+/- 777.0837

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Josh McCloskey - Operations Technician I

Date Mixed: 05-Sep-2023 **Balance:** B251644995

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0196453

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

S11749 ↓ S11794 RC 11/30/23

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBN3770	99%	2,013.0 µg/mL	+/- 25.0521

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

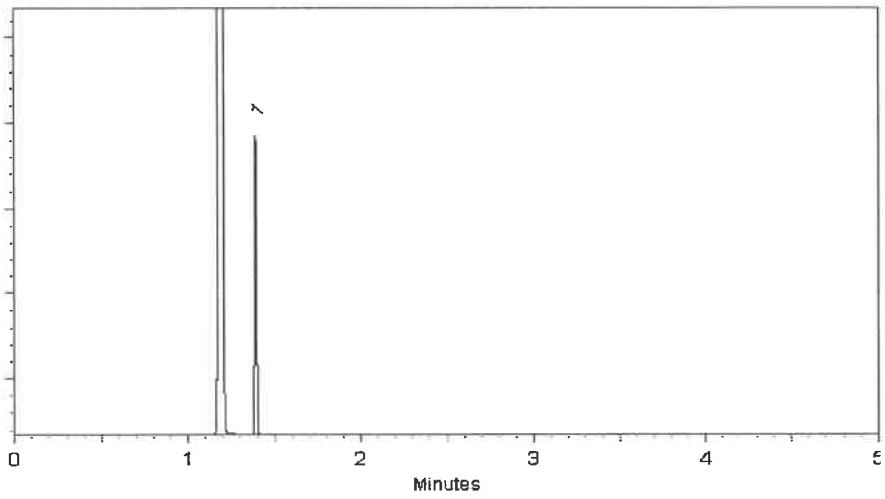
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed: 30-Mar-2023 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 31-Mar-2023

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

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Catalog No. : 31853 **Lot No.:** A0200655

S11795 ↓ S11808 RC 11/30/23

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBQ1693	99%	2,007.0 µg/mL	+/- 24.9775

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

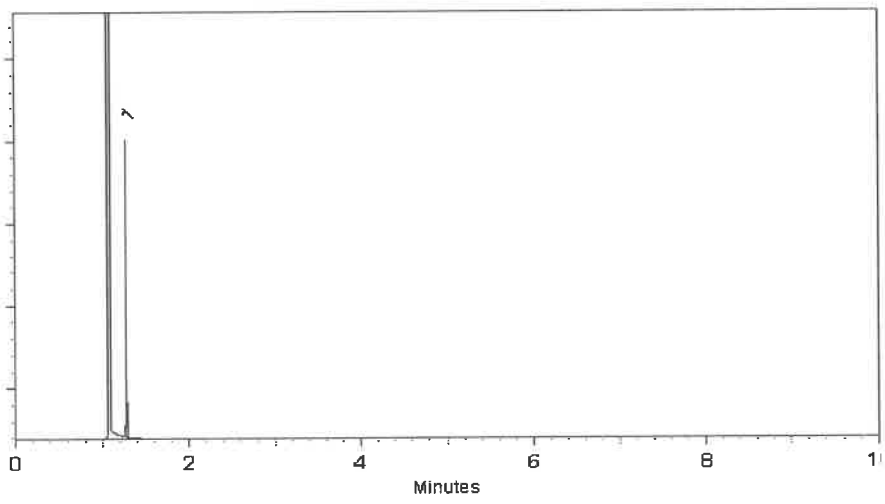
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 06-Aug-2023 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 08-Aug-2023

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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Certificate of Analysis

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 µg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

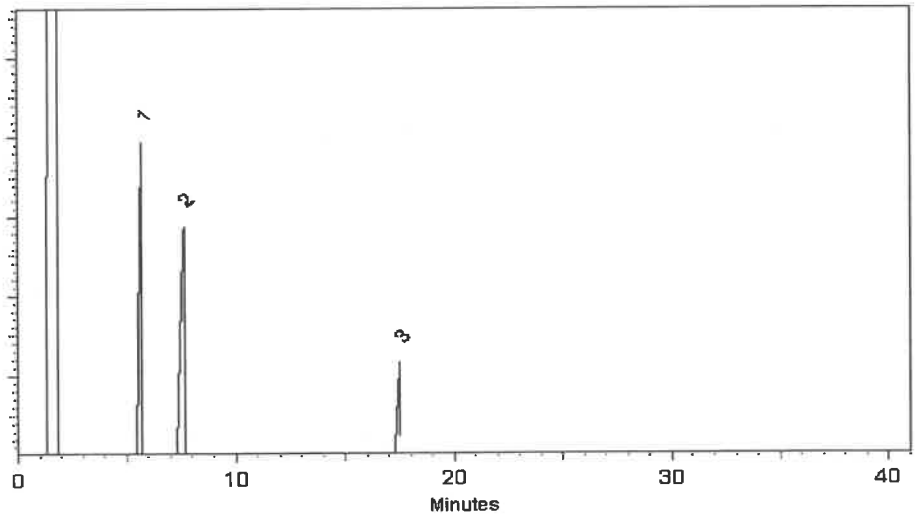
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Certificate of Analysis

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 µg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

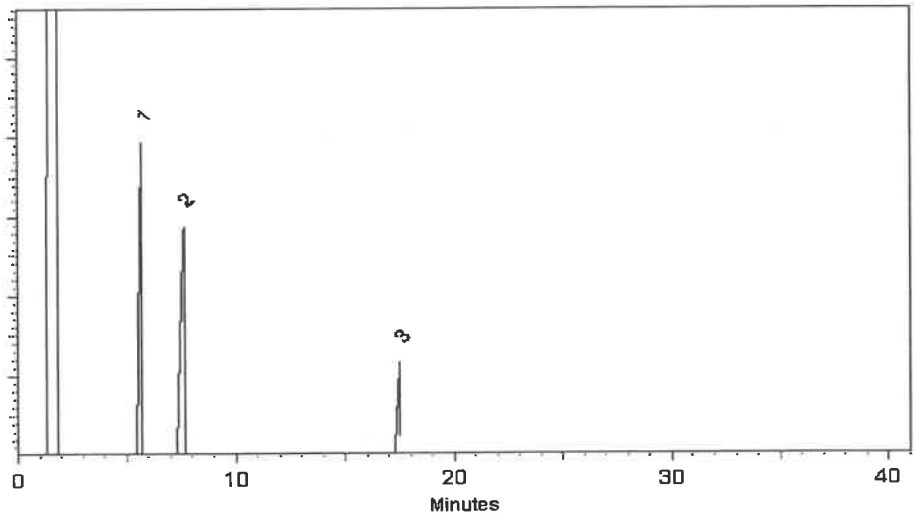
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 µg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

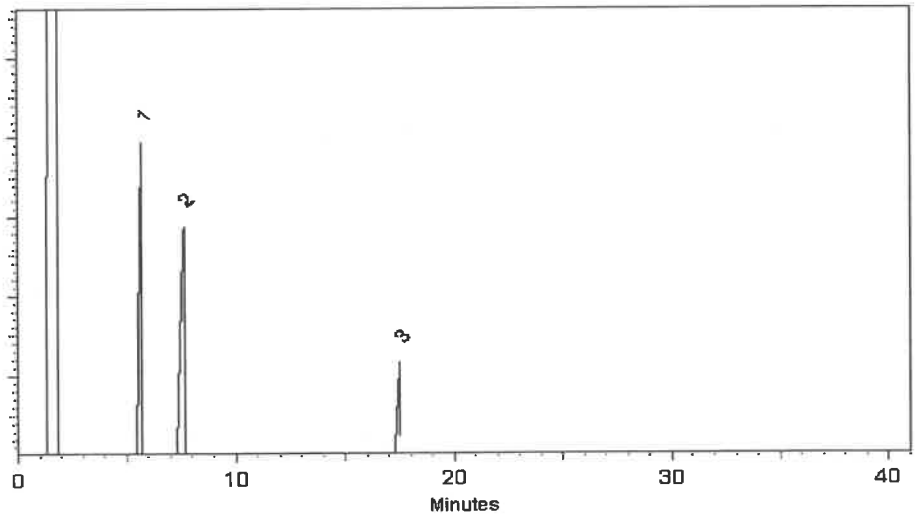
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Certificate of Analysis

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 µg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

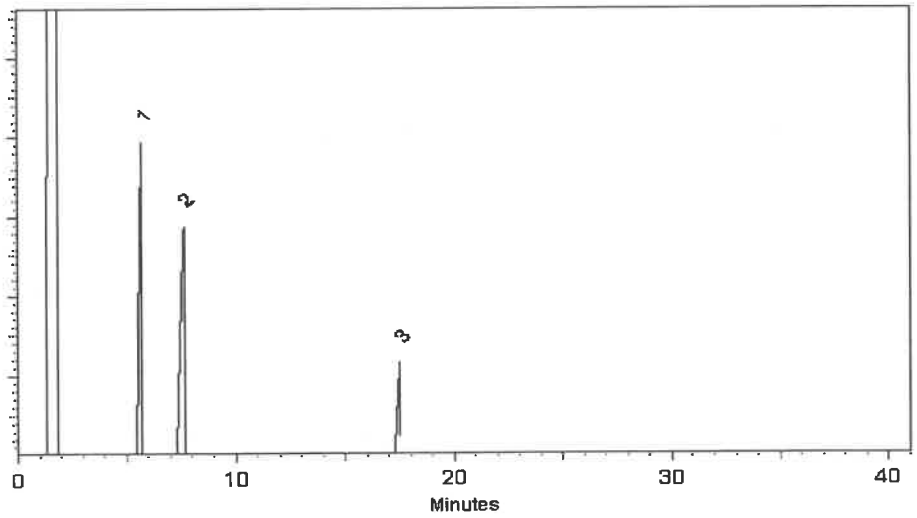
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



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Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Certificate of Analysis

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31087 **Lot No.:** A0206206

Description : Acid Surrogate Mix (4/89 SOW)

Acid Surrogate 10, 000µg/mL, Methanol, 5mL/ampul

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : January 31, 2032 **Storage:** 10°C or colder

Ship: Ambient

S12187 ↓ S12206 } RC/ 03/18/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	2-Fluorophenol	367-12-4	STBK1705	99%	10,005.3 µg/mL	+/- 302.5390
2	Phenol-d6	13127-88-3	PR-33287A	99%	10,005.5 µg/mL	+/- 302.5475
3	2,4,6-Tribromophenol	118-79-6	RP230831RSR	99%	10,006.6 µg/mL	+/- 302.5783

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

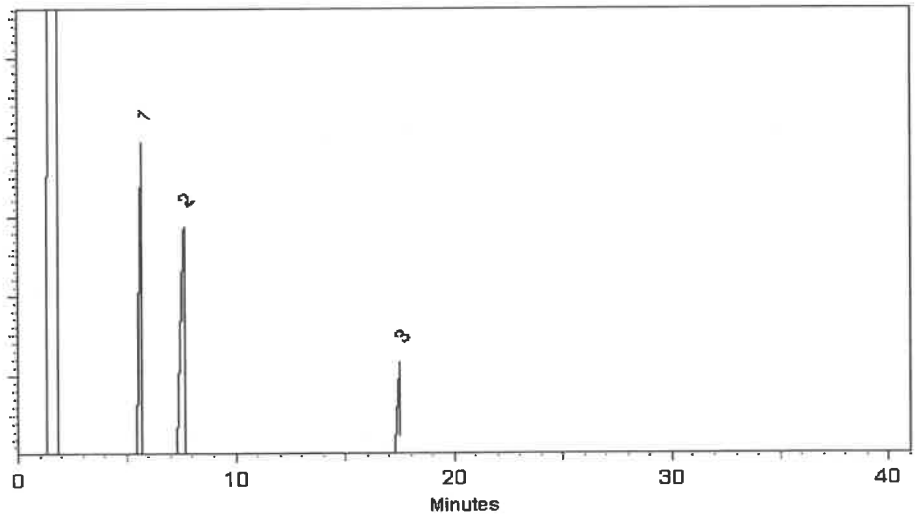
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 04-Jan-2024 **Balance Serial #** 1128360905

Christie Mills - Operations Lead Tech - ARM QC

Date Passed: 08-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Certificate of Analysis

chromatographic plus

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31086 **Lot No.:** A0206381

Description : B/N Surrogate Mix (4/89 SOW)

Base Neutral Surrogate 5000µg/mL, Methylene Chloride, 5mL/ampul

S12207 ↓ S12221 RC 03/18/24

Container Size : 5 mL **Pkg Amt:** > 5 mL

Expiration Date : December 31, 2029 **Storage:** 10°C or colder

Handling: Sonicate prior to use. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Nitrobenzene-d5	4165-60-0	I-25158	99%	5,029.3 µg/mL	+/- 226.5204
2	2-Fluorobiphenyl	321-60-8	00021384	99%	5,030.9 µg/mL	+/- 226.5936
3	p-Terphenyl-d14	1718-51-0	PR-32599	99%	5,026.4 µg/mL	+/- 226.3909

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
Due to the limited solubility of p-terphenyl-d14 in methanol, we do not recommend that this mixture be diluted in methanol.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
40°C (hold 2 min.) to 330°C
@ 10°C/min. (hold 10 min.)

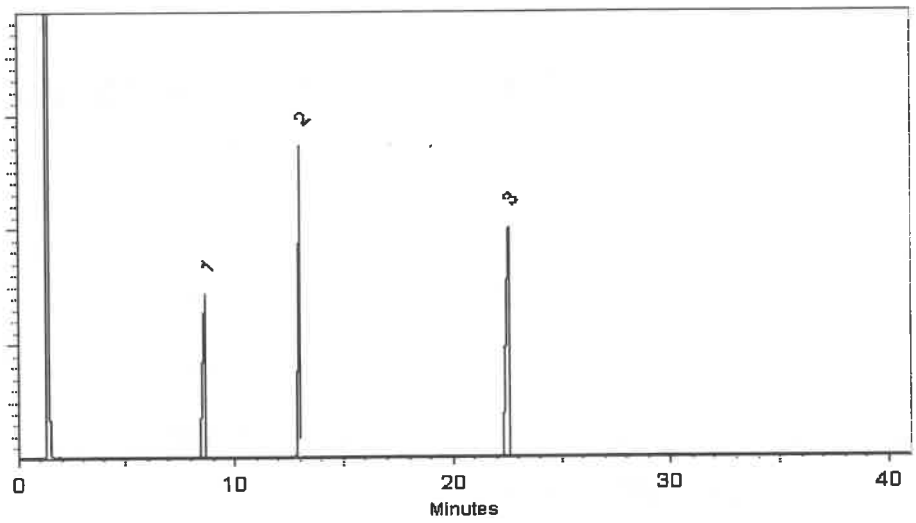
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
2 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Jess Hoy - Operations Tech I

Date Mixed: 09-Jan-2024 **Balance Serial #** 1128360905

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 11-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30409 **Lot No.:** A0206650

Description : Pyridine Standard

Pyridine 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

S12242 ↓ S12254 RC/ 5/15/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	2,020.0 µg/mL	+/- 33.0924

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

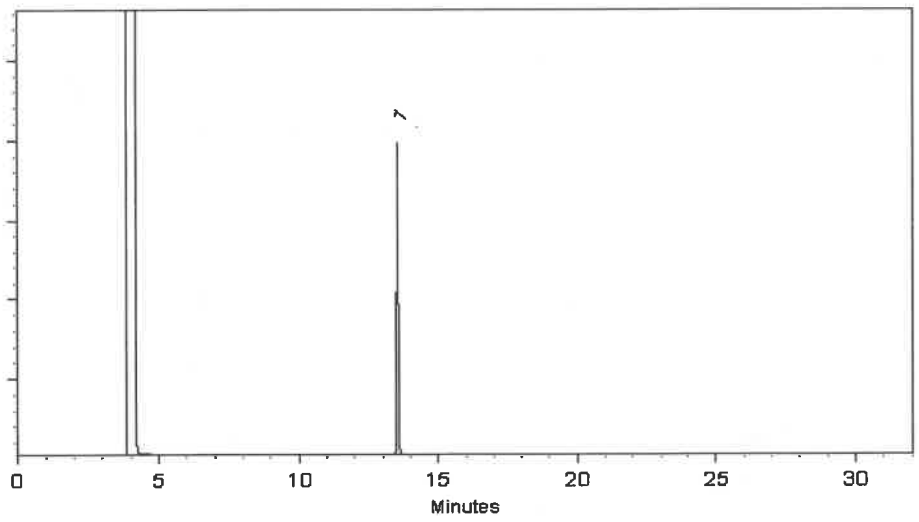
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed: 16-Jan-2024 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 18-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 30409 **Lot No.:** A0206650

Description : Pyridine Standard

Pyridine 2000µg/mL, P&T Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : October 31, 2027 **Storage:** 0°C or colder

Ship: Ambient

S12242 ↓ S12254 RC/ 5/15/24

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBP6240	99%	2,020.0 µg/mL	+/- 33.0924

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: P&T Methanol
CAS # 67-56-1
Purity 99%

Quality Confirmation Test

Column:
105m x 0.53mm x 3.0µm
Rtx-502.2 (cat.#10910)

Carrier Gas:
hydrogen-constant pressure 11.0 psi.

Temp. Program:
40°C (hold 2 min.) to 240°C
@ 8°C/min. (hold 5 min.)

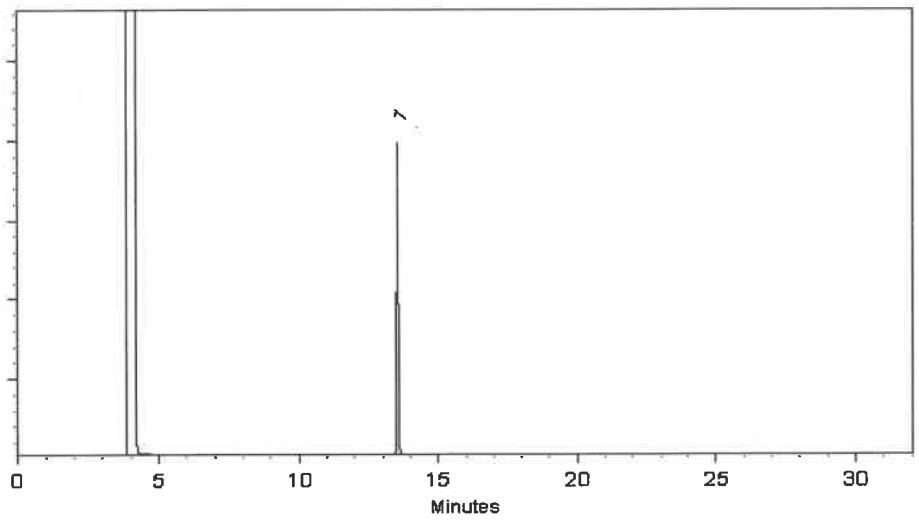
Inj. Temp:
200°C

Det. Temp:
250°C

Det. Type:
FID

Split Vent:
40 ml/min

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Sam Moodler - Operations Tech I

Date Mixed: 16-Jan-2024 **Balance Serial #** B707717271

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 18-Jan-2024

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S12302 ↓ S12311 } RC/ 5/30/24

Catalog No. : 31902 **Lot No.:** A0206859

Description : Additions Standard

Additions Standard 1000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 µg/mL	+/- 29.5419
2	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.8 µg/mL	+/- 29.6521
3	Atrazine	1912-24-9	5FYWL	99%	1,008.8 µg/mL	+/- 29.6521

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

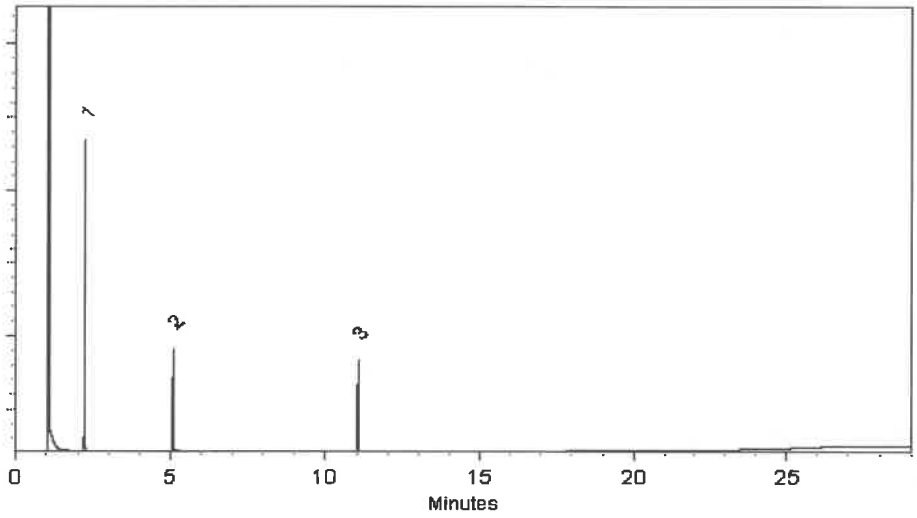
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacey Wanner - Operations Technician I

Date Mixed: 23-Jan-2024 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

S12302 ↓ S12311 } RC/ 5/30/24

Catalog No. : 31902 **Lot No.:** A0206859

Description : Additions Standard

Additions Standard 1000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 µg/mL	+/- 29.5419
2	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.8 µg/mL	+/- 29.6521
3	Atrazine	1912-24-9	5FYWL	99%	1,008.8 µg/mL	+/- 29.6521

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

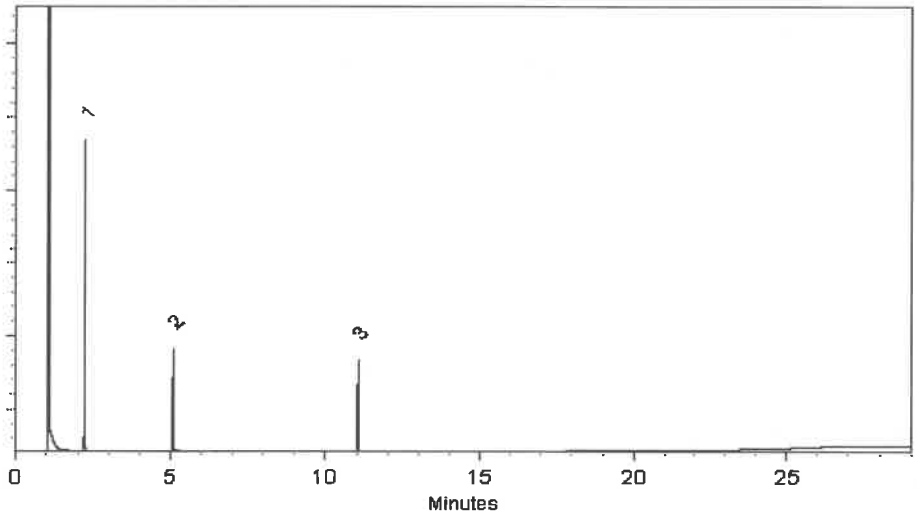
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacey Wanner - Operations Technician I

Date Mixed: 23-Jan-2024 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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S12302 ↓ S12311 } RC/ 5/30/24

Catalog No. : 31902 **Lot No.:** A0206859

Description : Additions Standard

Additions Standard 1000 µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2026 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,005.0 µg/mL	+/- 29.5419
2	epsilon-Caprolactam	105-60-2	I16X016	99%	1,008.8 µg/mL	+/- 29.6521
3	Atrazine	1912-24-9	5FYWL	99%	1,008.8 µg/mL	+/- 29.6521

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

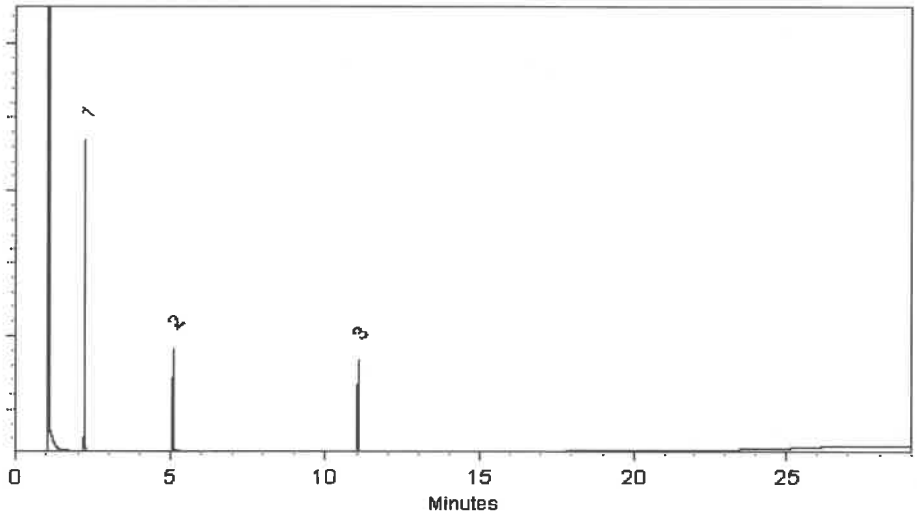
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Stacey Wanner - Operations Technician I

Date Mixed: 23-Jan-2024 **Balance Serial #** B442140311

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 24-Jan-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Certificate #3222.02

Certificate of Analysis

gravimetric

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 µg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 µg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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CERTIFIED REFERENCE MATERIAL

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ISO/IEC 17025 Accredited
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Certificate #3222.02

Certificate of Analysis

gravimetric

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 µg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 µg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.

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ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

Certificate of Analysis

gravimetric

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 µg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 µg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 µg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 µg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
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Purity Notes:

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  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555224 **Lot No.:** A0214017

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,005.0 µg/mL	+/- 29.541899
2	Acetophenone	98-86-2	STBH8205	99%	1,005.0 µg/mL	+/- 29.541899
3	Benzaldehyde	100-52-7	RD231129RSRA	99%	1,008.0 µg/mL	+/- 29.630084
4	Benzoic acid	65-85-0	MKCR2694	99%	1,010.0 µg/mL	+/- 29.688874
5	Biphenyl	92-52-4	MKCS5928	99%	1,008.0 µg/mL	+/- 29.630084

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12509 ↓ S12568 } RC/ 7/24/24

Jess Hoy - Operations Tech I

Date Mixed: 18-Jul-2024 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k\sqrt{u^2_{gravimetric} + u^2_{homogeneity} + u^2_{storage\ stability} + u^2_{shipping\ stability}}$$

  k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31615 **Lot No.:** A0212955

Description : GC/MS Tuning Mixture

GC/MS Tuning Mixture 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2027 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pentachlorophenol	87-86-5	RP240517RSR	99%	1,004.5 µg/mL	+/- 44.8902
2	DFTPP (Decafluorotriphenylphosphine)	5074-71-5	Q117-147	99%	1,004.5 µg/mL	+/- 44.8902
3	Benzidine	92-87-5	S240430RSR	99%	1,006.0 µg/mL	+/- 44.9572
4	4,4'-DDT	50-29-3	S240530RSR	97%	1,000.1 µg/mL	+/- 44.6922

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

S12577 ↓ S12579 } RC 8/2/24

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant pressure 10 psi.

Temp. Program:
75°C (hold 1 min.) to 330°C
@ 20°C/min. (hold 10 min.)

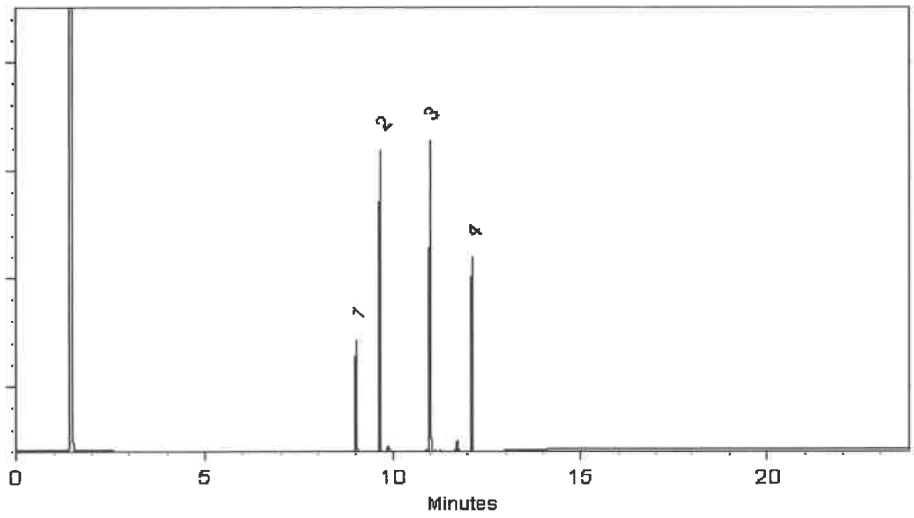
Inj. Temp:
250°C

Det. Temp:
330°C

Det. Type:
FID

Split Vent:
10 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Ethan Winiarski - Operations Tech I

Date Mixed: 19-Jun-2024 **Balance Serial #** 1128353505

Jennifer Pollino - Operations Tech III - ARM QC

Date Passed: 26-Jun-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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chromatographic plus

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31900 **Lot No.:** A0215529

Description : OLM 01.1 Revised SV MegaMix

OLM 01.1 Revised SV MegaMix 500-1000 µg/mL, Methylene chloride, 1mL/ampul

S12736 ↓ S12754 } AC 10/9/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Phenol	108-95-2	MKCK1120	99%	1,008.6 µg/mL	+/- 19.3211
2	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,002.3 µg/mL	+/- 19.2013
3	2-Chlorophenol	95-57-8	STBJ3909	99%	1,005.2 µg/mL	+/- 19.2564
4	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,006.3 µg/mL	+/- 19.2768
5	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,009.3 µg/mL	+/- 19.3354
6	Acetophenone	98-86-2	STBH8205	99%	1,003.8 µg/mL	+/- 18.5851
7	Hexachloroethane	67-72-1	QTORH	99%	1,000.6 µg/mL	+/- 19.1690
8	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.5 µg/mL	+/- 19.2599
9	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	500.3 µg/mL	+/- 9.5854
10	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	502.1 µg/mL	+/- 9.6213
11	Nitrobenzene	98-95-3	10224044	99%	1,003.2 µg/mL	+/- 19.2181
12	Isophorone	78-59-1	MKCC9506	99%	1,007.0 µg/mL	+/- 19.2911
13	2-Nitrophenol	88-75-5	RP230509C	99%	1,003.4 µg/mL	+/- 19.2217
14	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,008.1 µg/mL	+/- 19.3115
15	Bis(2-chloroethoxy)methane	111-91-1	15174900	99%	1,002.3 µg/mL	+/- 19.2001
16	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,002.3 µg/mL	+/- 19.2001

17	Naphthalene	91-20-3	STBL1057	99%	1,003.6	µg/mL	+/- 19.2253
18	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,005.5	µg/mL	+/- 19.2791
19	Hexachlorobutadiene	87-68-3	RP240110CTH	97%	1,003.9	µg/mL	+/- 19.2316
20	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,005.1	µg/mL	+/- 19.2718
21	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.8	µg/mL	+/- 19.2301
22	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,000.5	µg/mL	+/- 19.1832
23	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,001.3	µg/mL	+/- 19.1811
24	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,004.1	µg/mL	+/- 19.2349
25	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,008.6	µg/mL	+/- 19.3221
26	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,002.3	µg/mL	+/- 19.2001
27	Biphenyl	92-52-4	MKCS5928	99%	1,001.3	µg/mL	+/- 18.5388
28	2-Nitroaniline	88-74-4	RP240715RSR	99%	1,000.5	µg/mL	+/- 19.1832
29	Acenaphthylene	208-96-8	214935V16F	97%	999.9	µg/mL	+/- 19.1561
30	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.8	µg/mL	+/- 19.2672
31	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,001.2	µg/mL	+/- 19.1798
32	Acenaphthene	83-32-9	MKCR7169	99%	1,000.0	µg/mL	+/- 19.1570
33	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,005.5	µg/mL	+/- 19.2791
34	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,008.8	µg/mL	+/- 19.3259
35	Dibenzofuran	132-64-9	MKCD9952	99%	1,002.5	µg/mL	+/- 18.5619
36	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,002.5	µg/mL	+/- 19.2049
37	4-Nitrophenol	100-02-7	RP230627	99%	1,004.4	µg/mL	+/- 19.2421
38	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,001.5	µg/mL	+/- 19.2024
39	Fluorene	86-73-7	10241100	99%	1,004.2	µg/mL	+/- 19.2373
40	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.0	µg/mL	+/- 19.2145
41	Diethylphthalate	84-66-2	BCCJ6241	99%	1,002.1	µg/mL	+/- 19.1978
42	4-Nitroaniline	100-01-6	RP240510RSR	99%	1,005.0	µg/mL	+/- 19.2695
43	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S240410RSR	99%	1,001.1	µg/mL	+/- 19.1786
44	Diphenylamine	122-39-4	MKCT1512	99%	1,004.5	µg/mL	+/- 19.2599
45	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,005.9	µg/mL	+/- 19.2708
46	Hexachlorobenzene	118-74-1	15458400	99%	1,009.2	µg/mL	+/- 19.3331
47	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,008.9	µg/mL	+/- 19.3283
48	Phenanthrene	85-01-8	MKCS5188	99%	1,006.2	µg/mL	+/- 19.2756
49	Anthracene	120-12-7	101492T18R	99%	1,001.6	µg/mL	+/- 19.1882
50	Carbazole	86-74-8	15276700	99%	1,004.0	µg/mL	+/- 19.2503
51	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,002.5	µg/mL	+/- 19.2049
52	Fluoranthene	206-44-0	MKCQ4728	99%	1,008.7	µg/mL	+/- 19.3235

53	Pyrene	129-00-0	BCCK2592	99%	1,002.9	µg/mL	+/- 19.2121
54	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.6	µg/mL	+/- 19.2444
55	Benz(a)anthracene	56-55-3	I50012022BAA	99%	1,009.1	µg/mL	+/- 19.3307
56	Chrysene	218-01-9	RP240719RSR	99%	1,005.9	µg/mL	+/- 19.2708
57	3,3'-Dichlorobenzidine	91-94-1	S231019RSR	99%	1,001.5	µg/mL	+/- 19.2024
58	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,006.3	µg/mL	+/- 19.2768
59	Di-n-octyl phthalate	117-84-0	15276800	99%	1,008.9	µg/mL	+/- 19.3283
60	Benzo(b)fluoranthene	205-99-2	022013B	99%	1,006.4	µg/mL	+/- 19.2792
61	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,001.9	µg/mL	+/- 19.1942
62	Benzo(a)pyrene	50-32-8	O45GL	98%	1,003.9	µg/mL	+/- 19.2327
63	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,003.7	µg/mL	+/- 19.2281
64	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,004.2	µg/mL	+/- 19.2373
65	Benzo(g,h,i)perylene	191-24-2	RP240625RSR	97%	1,001.5	µg/mL	+/- 19.1863

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31900 **Lot No.:** A0215529

Description : OLM 01.1 Revised SV MegaMix

OLM 01.1 Revised SV MegaMix 500-1000 µg/mL, Methylene chloride, 1mL/ampul

S12736 ↓ S12754 } AC 10/9/24

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : February 28, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Phenol	108-95-2	MKCK1120	99%	1,008.6 µg/mL	+/- 19.3211
2	Bis(2-chloroethyl)ether	111-44-4	SHBL6942	99%	1,002.3 µg/mL	+/- 19.2013
3	2-Chlorophenol	95-57-8	STBJ3909	99%	1,005.2 µg/mL	+/- 19.2564
4	2,2'-oxybis(1-chloropropane)	108-60-1	29-MAR-45-5	99%	1,006.3 µg/mL	+/- 19.2768
5	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,009.3 µg/mL	+/- 19.3354
6	Acetophenone	98-86-2	STBH8205	99%	1,003.8 µg/mL	+/- 18.5851
7	Hexachloroethane	67-72-1	QTORH	99%	1,000.6 µg/mL	+/- 19.1690
8	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.5 µg/mL	+/- 19.2599
9	4-Methylphenol (p-cresol)	106-44-5	SHBN3411	99%	500.3 µg/mL	+/- 9.5854
10	3-Methylphenol (m-cresol)	108-39-4	STBJ0710	99%	502.1 µg/mL	+/- 9.6213
11	Nitrobenzene	98-95-3	10224044	99%	1,003.2 µg/mL	+/- 19.2181
12	Isophorone	78-59-1	MKCC9506	99%	1,007.0 µg/mL	+/- 19.2911
13	2-Nitrophenol	88-75-5	RP230509C	99%	1,003.4 µg/mL	+/- 19.2217
14	2,4-Dimethylphenol	105-67-9	XW5GK	99%	1,008.1 µg/mL	+/- 19.3115
15	Bis(2-chloroethoxy)methane	111-91-1	15174900	99%	1,002.3 µg/mL	+/- 19.2001
16	2,4-Dichlorophenol	120-83-2	BCBZ6787	99%	1,002.3 µg/mL	+/- 19.2001

17	Naphthalene	91-20-3	STBL1057	99%	1,003.6	µg/mL	+/- 19.2253
18	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,005.5	µg/mL	+/- 19.2791
19	Hexachlorobutadiene	87-68-3	RP240110CTH	97%	1,003.9	µg/mL	+/- 19.2316
20	2-Methylnaphthalene	91-57-6	STBK0259	96%	1,005.1	µg/mL	+/- 19.2718
21	4-Chloro-3-methylphenol	59-50-7	BCCD4461	99%	1,003.8	µg/mL	+/- 19.2301
22	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,000.5	µg/mL	+/- 19.1832
23	Hexachlorocyclopentadiene	77-47-4	099063I14L	98%	1,001.3	µg/mL	+/- 19.1811
24	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,004.1	µg/mL	+/- 19.2349
25	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,008.6	µg/mL	+/- 19.3221
26	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,002.3	µg/mL	+/- 19.2001
27	Biphenyl	92-52-4	MKCS5928	99%	1,001.3	µg/mL	+/- 18.5388
28	2-Nitroaniline	88-74-4	RP240715RSR	99%	1,000.5	µg/mL	+/- 19.1832
29	Acenaphthylene	208-96-8	214935V16F	97%	999.9	µg/mL	+/- 19.1561
30	Dimethylphthalate	131-11-3	358221L17K	99%	1,005.8	µg/mL	+/- 19.2672
31	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,001.2	µg/mL	+/- 19.1798
32	Acenaphthene	83-32-9	MKCR7169	99%	1,000.0	µg/mL	+/- 19.1570
33	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,005.5	µg/mL	+/- 19.2791
34	2,4-Dinitrophenol	51-28-5	DR230417RSR	99%	1,008.8	µg/mL	+/- 19.3259
35	Dibenzofuran	132-64-9	MKCD9952	99%	1,002.5	µg/mL	+/- 18.5619
36	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,002.5	µg/mL	+/- 19.2049
37	4-Nitrophenol	100-02-7	RP230627	99%	1,004.4	µg/mL	+/- 19.2421
38	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,001.5	µg/mL	+/- 19.2024
39	Fluorene	86-73-7	10241100	99%	1,004.2	µg/mL	+/- 19.2373
40	4-Chlorophenyl phenyl ether	7005-72-3	MKCT7248	99%	1,003.0	µg/mL	+/- 19.2145
41	Diethylphthalate	84-66-2	BCCJ6241	99%	1,002.1	µg/mL	+/- 19.1978
42	4-Nitroaniline	100-01-6	RP240510RSR	99%	1,005.0	µg/mL	+/- 19.2695
43	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S240410RSR	99%	1,001.1	µg/mL	+/- 19.1786
44	Diphenylamine	122-39-4	MKCT1512	99%	1,004.5	µg/mL	+/- 19.2599
45	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,005.9	µg/mL	+/- 19.2708
46	Hexachlorobenzene	118-74-1	15458400	99%	1,009.2	µg/mL	+/- 19.3331
47	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,008.9	µg/mL	+/- 19.3283
48	Phenanthrene	85-01-8	MKCS5188	99%	1,006.2	µg/mL	+/- 19.2756
49	Anthracene	120-12-7	101492T18R	99%	1,001.6	µg/mL	+/- 19.1882
50	Carbazole	86-74-8	15276700	99%	1,004.0	µg/mL	+/- 19.2503
51	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,002.5	µg/mL	+/- 19.2049
52	Fluoranthene	206-44-0	MKCQ4728	99%	1,008.7	µg/mL	+/- 19.3235

53	Pyrene	129-00-0	BCCK2592	99%	1,002.9	µg/mL	+/- 19.2121
54	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.6	µg/mL	+/- 19.2444
55	Benz(a)anthracene	56-55-3	I50012022BAA	99%	1,009.1	µg/mL	+/- 19.3307
56	Chrysene	218-01-9	RP240719RSR	99%	1,005.9	µg/mL	+/- 19.2708
57	3,3'-Dichlorobenzidine	91-94-1	S231019RSR	99%	1,001.5	µg/mL	+/- 19.2024
58	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,006.3	µg/mL	+/- 19.2768
59	Di-n-octyl phthalate	117-84-0	15276800	99%	1,008.9	µg/mL	+/- 19.3283
60	Benzo(b)fluoranthene	205-99-2	022013B	99%	1,006.4	µg/mL	+/- 19.2792
61	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,001.9	µg/mL	+/- 19.1942
62	Benzo(a)pyrene	50-32-8	O45GL	98%	1,003.9	µg/mL	+/- 19.2327
63	Indeno(1,2,3-cd)pyrene	193-39-5	12-JKL-118-9	97%	1,003.7	µg/mL	+/- 19.2281
64	Dibenz(a,h)anthracene	53-70-3	2-ASA-59-1	99%	1,004.2	µg/mL	+/- 19.2373
65	Benzo(g,h,i)perylene	191-24-2	RP240625RSR	97%	1,001.5	µg/mL	+/- 19.1863

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:

N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Absolute Standards, Inc.
800-368-1131
www.absolutestandards.com

Certified Reference Material CRM

ANAB ISO 17034 Accredited
AR-1539 Certificate Number
https://Absolutestandards.com

CERTIFIED WEIGHT REPORT

Part Number: 90494
Lot Number: 061323
Description: 1-Methylnaphthalene

Expiration Date: 061328
Recommended Storage: Refrigerate (4 °C)
Nominal Concentration (µg/mL): 2000
NIST Test ID#: 6UTB

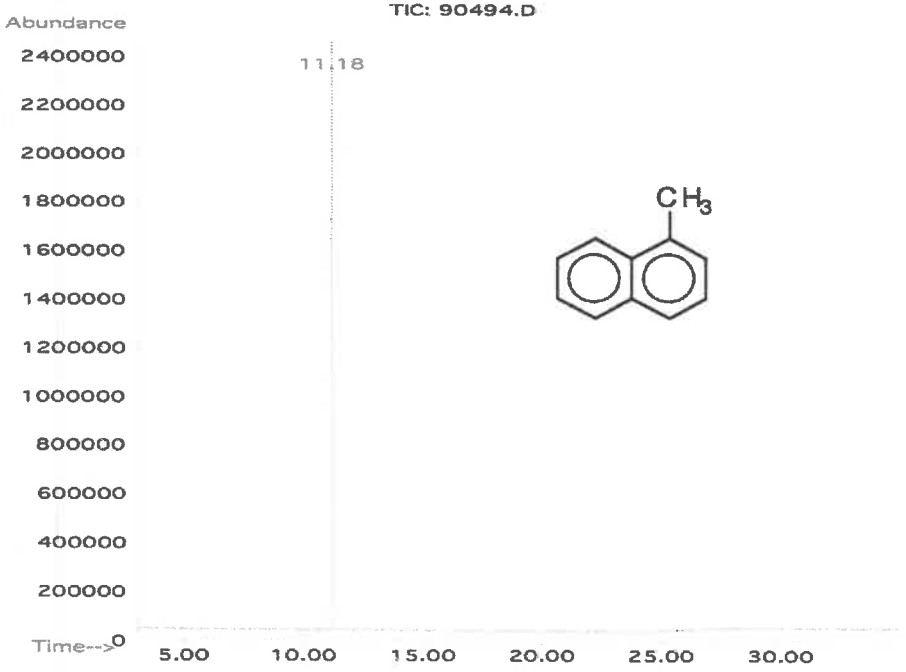
Solvent(s): **Lot#**
Methylene chloride C21F09CAS0000DCM

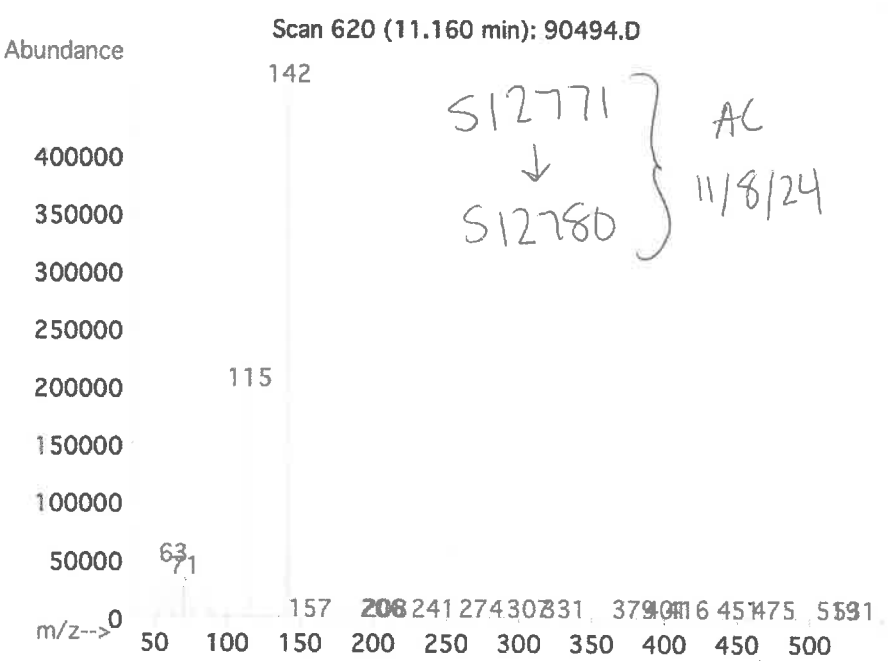
5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 100.0 0.031 Flask Uncertainty

Prashant Chauhan		061323
Formulated By:	Prashant Chauhan	DATE
Pedro L. Rentas		061323
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
1. 1-Methylnaphthalene	313	04413BX	2000	98	0.2	0.20417	0.20430	2001.2	8.3	90-12-0	N/A	orl-rat 1840mg/kg

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 200°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Gina McLane.





S12771 → S12780 AC 11/8/24

- The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.
- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certifed (+/-) 0.5% of the stated value, unless otherwise stated.
- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.
- Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).

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CERTIFIED WEIGHT REPORT

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Lot Number: 061323
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Expiration Date: 061328
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NIST Test ID#: 6UTB

Solvent(s): **Lot#**
Methylene chloride C21F09CAS0000DCM

5E-05 Balance Uncertainty
Weight(s) shown below were combined and diluted to (mL): 100.0 0.031 Flask Uncertainty

Prashant Chauhan		061323
Formulated By:	Prashant Chauhan	DATE
Pedro L. Rentas		061323
Reviewed By:	Pedro L. Rentas	DATE

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity (%)	Uncertainty Purity	Target Weight(g)	Actual Weight(g)	Actual Conc (µg/mL)	Expanded Uncertainty (+/-) (µg/mL)	SDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50
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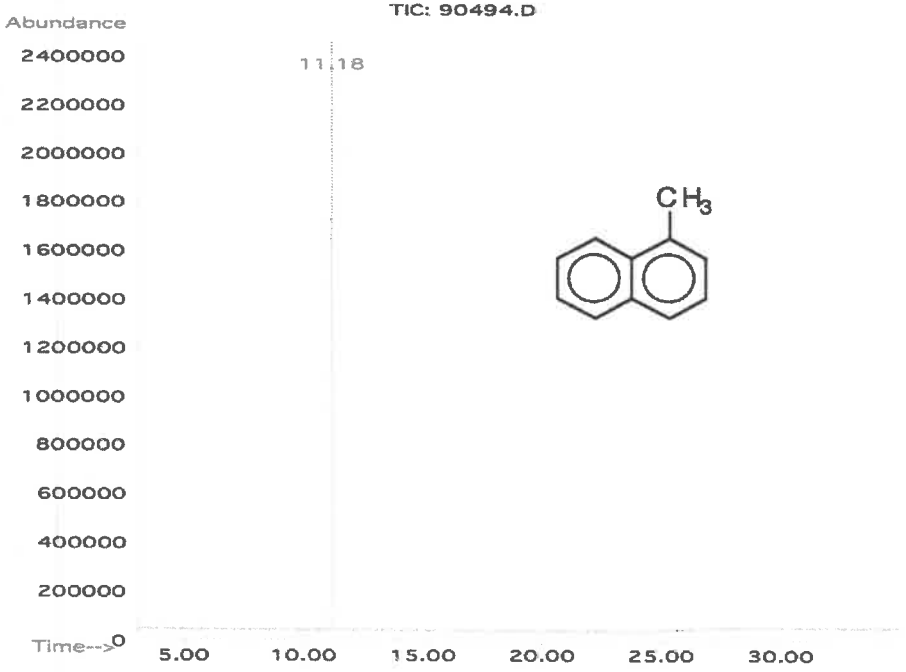

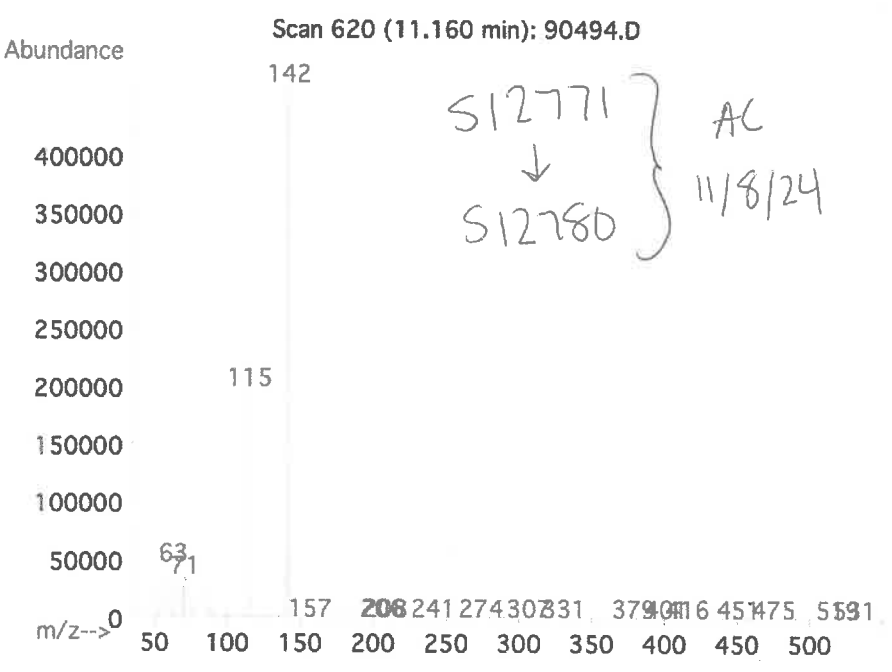

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RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ilac-MRA A2LA ACCREDITED ISO 17034 Accredited Reference Material Producer Certificate #3222.01

ilac-MRA A2LA ACCREDITED ISO/IEC 17025 Accredited Testing Laboratory Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0218894

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

513118 ↓ 513147 } RC/ 5/20/25.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBQ1693	99%	2,002.4 µg/mL	+/- 24.9202

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

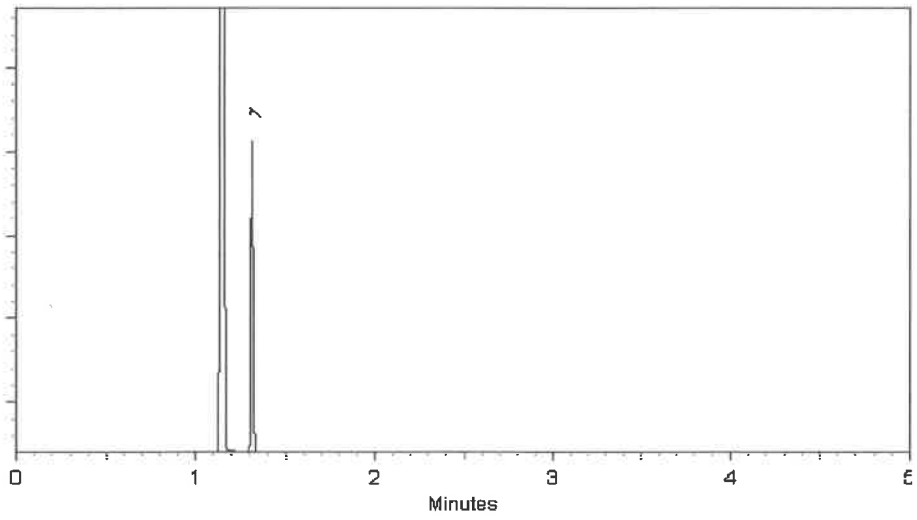
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 07-Nov-2024 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 11-Nov-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

513118 ↓ 513147 } RC/ 5/20/25.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBQ1693	99%	2,002.4 µg/mL	+/- 24.9202

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Solvent: Methylene chloride
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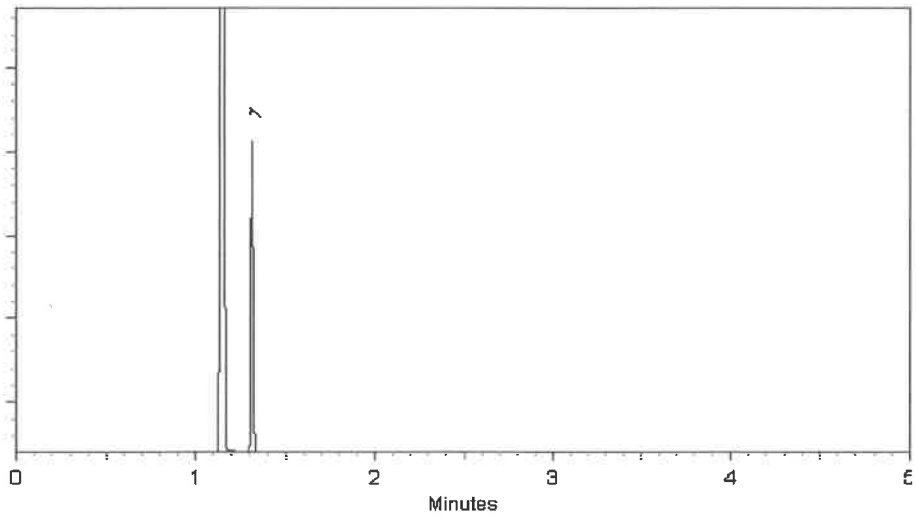
1µl



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Dillan Murphy - Operations Technician I

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Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

513118 ↓ 513147 } RC/ 5/20/25.

CERTIFIED VALUES

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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

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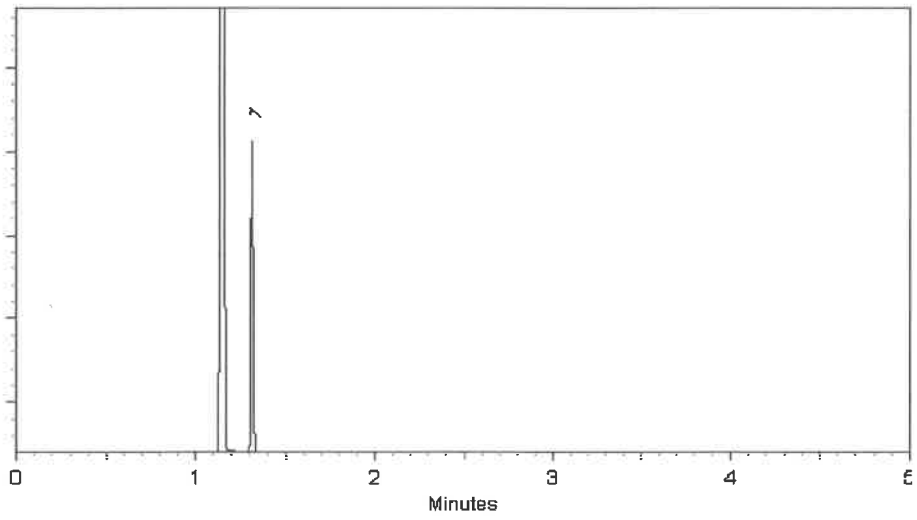

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Penelope Riglin - Operations Tech I

Date Mixed: 07-Nov-2024 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 11-Nov-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

513118 ↓ 513147 } RC/ 5/20/25.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

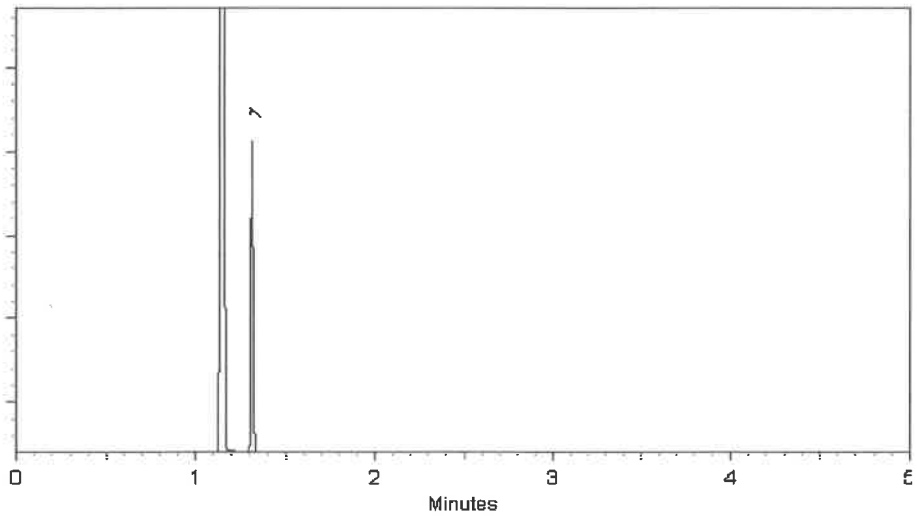
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 07-Nov-2024 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 11-Nov-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31853 **Lot No.:** A0218894

Description : 1,4-dioxane

1,4-Dioxane 2,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : November 30, 2029 **Storage:** 0°C or colder

Ship: Ambient

513118 ↓ 513147 } RC/ 5/20/25.

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dioxane	123-91-1	SHBQ1693	99%	2,002.4 µg/mL	+/- 24.9202

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

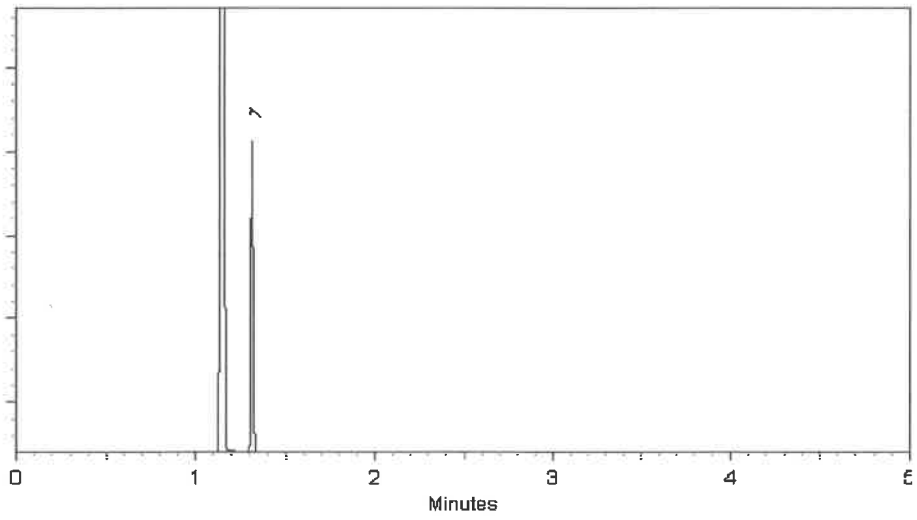
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Penelope Riglin - Operations Tech I

Date Mixed: 07-Nov-2024 **Balance Serial #** 1128360905

Dillan Murphy - Operations Technician I

Date Passed: 11-Nov-2024

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555871 **Lot No.:** A0226283

Description : Custom 4-Nitrophenol Standard

Custom 4-Nitrophenol Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2028 **Storage:** 10°C or colder

Ship: Ambient

S13158 } RC/
↓ } 6/4/25
S13167

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	4-Nitrophenol	100-02-7	20241120-1-AN	99%	25,192.0 µg/mL	+/- 783.0517

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Morgan Craighead - Mix Technician

Date Mixed: 02-Jun-2025 **Balance:** C322230531

REVIEWED

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31206 **Lot No.:** A0224359

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

S13168 ↓ S13197 } AC 6/9/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2031 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,000.0 µg/mL	+/- 90.0812
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,000.8 µg/mL	+/- 90.1187
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,000.8 µg/mL	+/- 90.1187
4	Phenanthrene-d10	1517-22-2	PR-34099	99%	2,000.0 µg/mL	+/- 90.0812
5	Chrysene-d12	1719-03-5	PR-33506	99%	2,000.8 µg/mL	+/- 90.1187
6	Perylene-d12	1520-96-3	PR-33205	99%	2,000.0 µg/mL	+/- 90.0812

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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Catalog No. : 31206 **Lot No.:** A0224359

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

S13168 ↓ S13197 } AC 6/9/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2031 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,000.0 µg/mL	+/- 90.0812
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,000.8 µg/mL	+/- 90.1187
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,000.8 µg/mL	+/- 90.1187
4	Phenanthrene-d10	1517-22-2	PR-34099	99%	2,000.0 µg/mL	+/- 90.0812
5	Chrysene-d12	1719-03-5	PR-33506	99%	2,000.8 µg/mL	+/- 90.1187
6	Perylene-d12	1520-96-3	PR-33205	99%	2,000.0 µg/mL	+/- 90.0812

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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Catalog No. : 31206 **Lot No.:** A0224359

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

S13168 ↓ S13197 } AC 6/9/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2031 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,000.0 µg/mL	+/- 90.0812
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,000.8 µg/mL	+/- 90.1187
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,000.8 µg/mL	+/- 90.1187
4	Phenanthrene-d10	1517-22-2	PR-34099	99%	2,000.0 µg/mL	+/- 90.0812
5	Chrysene-d12	1719-03-5	PR-33506	99%	2,000.8 µg/mL	+/- 90.1187
6	Perylene-d12	1520-96-3	PR-33205	99%	2,000.0 µg/mL	+/- 90.0812

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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Catalog No. : 31206 **Lot No.:** A0224359

Description : SV Internal Standard Mix 2mg/ml

SV Internal Standard Mix 2mg/ml 2000 µg/ml, Methylene Chloride, 1mL/ampul

S13168 ↓ S13197 } AC 6/9/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : March 31, 2031 **Storage:** 10°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,4-Dichlorobenzene-d4	3855-82-1	PR-30447	99%	2,000.0 µg/mL	+/- 90.0812
2	Naphthalene-d8	1146-65-2	M-2180	99%	2,000.8 µg/mL	+/- 90.1187
3	Acenaphthene-d10	15067-26-2	PR-33507	99%	2,000.8 µg/mL	+/- 90.1187
4	Phenanthrene-d10	1517-22-2	PR-34099	99%	2,000.0 µg/mL	+/- 90.0812
5	Chrysene-d12	1719-03-5	PR-33506	99%	2,000.8 µg/mL	+/- 90.1187
6	Perylene-d12	1520-96-3	PR-33205	99%	2,000.0 µg/mL	+/- 90.0812

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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S13198 ↓ S13207 } AC 6/11/25

Catalog No. : 555868 **Lot No.:** A0226493

Description : Custom Benzidine Standard

Custom Benzidine Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2028 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzidine	92-87-5	S250227ECS	99%	25,004.0 µg/mL	+/- 495.8040

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Laith Clemente - Operations Technician I **Date Mixed:** 09-Jun-2025 **Balance:** 1122030677

Manufactured under Restek's ISO 9001:2015
Registered Quality System
Certificate #FM 80397

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S13198 ↓ S13207 } AC 6/11/25

Catalog No. : 555868 **Lot No.:** A0226493

Description : Custom Benzidine Standard

Custom Benzidine Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : June 30, 2028 **Storage:** 10°C or colder

Handling: Contains carcinogen/reproductive toxin. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzidine	92-87-5	S250227ECS	99%	25,004.0 µg/mL	+/- 495.8040

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Laith Clemente - Operations Technician I **Date Mixed:** 09-Jun-2025 **Balance:** 1122030677

Manufactured under Restek's ISO 9001:2015
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Certificate #FM 80397

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31879 **Lot No.:** A0221395

Description : Benzoic Acid Mix

Benzoic Acid 2000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2029 **Storage:** 10°C or colder

Ship: Ambient

S13214 ↓ S13218 AC 7/10/25

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzoic acid	65-85-0	MKCR2694	99%	2,002.2 µg/mL	+/- 60.5426

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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Catalog No. : 31879 **Lot No.:** A0221395

Description : Benzoic Acid Mix

Benzoic Acid 2000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : January 31, 2029 **Storage:** 10°C or colder

Ship: Ambient

S13214 ↓ S13218 AC 7/10/25

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Benzoic acid	65-85-0	MKCR2694	99%	2,002.2 µg/mL	+/- 60.5426

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

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This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 582978 **Lot No.:** A0228192

Description : Custom Calibration Standard - C8

Custom Calibration Standard - C8 2,000µg/mL, Methylene chloride, 1mL/ampul

513229 ↓ 513238 RC/ 8/1/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	N-Nitrosodimethylamine	62-75-9	S241226RSR	99%	2,000.0 µg/mL	+/- 35.7537
2	Aniline	62-53-3	X22F726	99%	2,002.5 µg/mL	+/- 35.7984
3	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	2,005.0 µg/mL	+/- 35.8431
4	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	2,005.0 µg/mL	+/- 35.8431
5	Benzyl alcohol	100-51-6	094986W07G	99%	2,015.0 µg/mL	+/- 36.0218
6	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	2,015.0 µg/mL	+/- 36.0218
7	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	2,020.0 µg/mL	+/- 36.1112
8	Azobenzene	103-33-3	BCCL3292	99%	2,005.0 µg/mL	+/- 35.8431

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

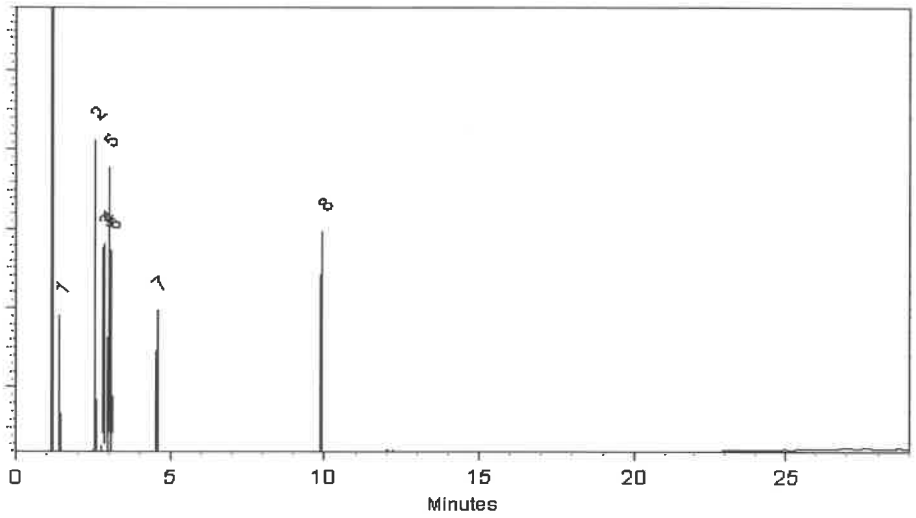
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Wilner Torres - Operation Tech I **Date Mixed:** 27-Jul-2025 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 30-Jul-2025 REVIEWED

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Catalog No. : 582978 **Lot No.:** A0228192

Description : Custom Calibration Standard - C8

Custom Calibration Standard - C8 2,000µg/mL, Methylene chloride, 1mL/ampul

513229 ↓ 513238 RC/ 8/1/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2028 **Storage:** 0°C or colder

Ship: Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	N-Nitrosodimethylamine	62-75-9	S241226RSR	99%	2,000.0 µg/mL	+/- 35.7537
2	Aniline	62-53-3	X22F726	99%	2,002.5 µg/mL	+/- 35.7984
3	1,3-Dichlorobenzene	541-73-1	BCCD5315	99%	2,005.0 µg/mL	+/- 35.8431
4	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	2,005.0 µg/mL	+/- 35.8431
5	Benzyl alcohol	100-51-6	094986W07G	99%	2,015.0 µg/mL	+/- 36.0218
6	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	2,015.0 µg/mL	+/- 36.0218
7	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	2,020.0 µg/mL	+/- 36.1112
8	Azobenzene	103-33-3	BCCL3292	99%	2,005.0 µg/mL	+/- 35.8431

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

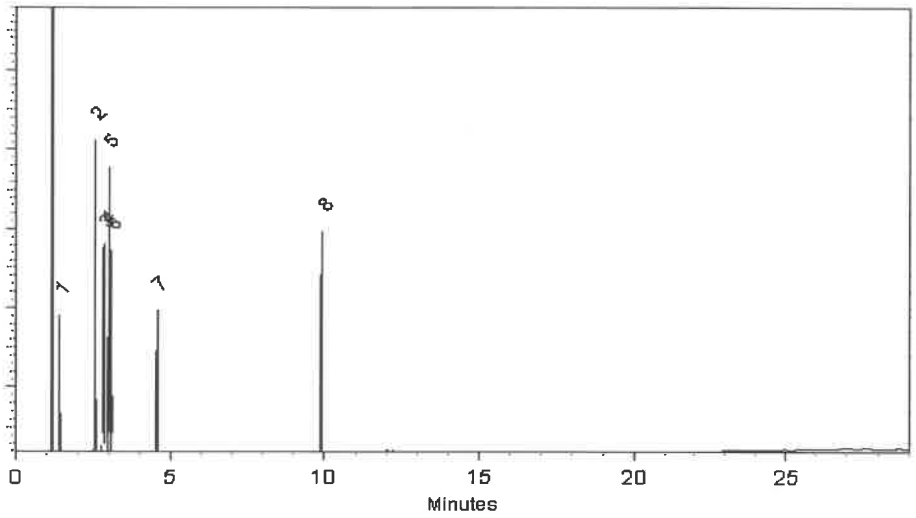
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Wilner Torres - Operation Tech I **Date Mixed:** 27-Jul-2025 **Balance Serial #** B345965662

Jennifer Pollino - Operations Tech III - ARM QC **Date Passed:** 30-Jul-2025 REVIEWED

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555223 **Lot No.:** A0228451

S13239 ↓ S13268 } RC 08/06/25

Description : Custom 8270 Plus Standard #1

Custom 8270 Plus Standard #1 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2027 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	3,3'-Dichlorobenzidine	91-94-1	S250226RSR	99%	1,006.0 µg/mL	+/- 23.0947
2	Atrazine	1912-24-9	5FYWL	99%	1,007.0 µg/mL	+/- 23.1176
3	Benzidine	92-87-5	S250227ECS	99%	1,003.0 µg/mL	+/- 23.0258
4	epsilon-Caprolactam	105-60-2	Y16H012	99%	1,003.0 µg/mL	+/- 23.0258

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tom Suckar - Mix Technician **Date Mixed:** 01-Aug-2025 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Purity 99%

Tom Suckar - Mix Technician **Date Mixed:** 01-Aug-2025 **Balance:** 1128360905

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Expiration Date : August 31, 2027 **Storage:** 10°C or colder

Handling: This product is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

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Tom Suckar - Mix Technician **Date Mixed:** 01-Aug-2025 **Balance:** 1128360905

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Expiration Date : August 31, 2027 **Storage:** 10°C or colder

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Solvent: Methylene chloride
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Purity 99%

Tom Suckar - Mix Technician **Date Mixed:** 01-Aug-2025 **Balance:** 1128360905

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Catalog No. : 555224 **Lot No.:** A0228494

S13269 ↓ S13298 } RC1 08/06/25

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2027 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	1,2,4,5-Tetrachlorobenzene	95-94-3	MKCT9480	99%	1,002.0 µg/mL	+/- 29.453715
2	Acetophenone	98-86-2	STBH8205	99%	1,001.0 µg/mL	+/- 29.424320
3	Benzaldehyde	100-52-7	RD250319RSR	99%	1,003.0 µg/mL	+/- 29.483110
4	Benzoic acid	65-85-0	MKCX1578	99%	1,001.0 µg/mL	+/- 29.424320
5	Biphenyl	92-52-4	MKCS5928	99%	1,002.0 µg/mL	+/- 29.453715

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Laith Clemente - Operations Technician I **Date Mixed:** 04-Aug-2025 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Catalog No. : 555224 **Lot No.:** A0228494

S13269 ↓ S13298 } RC1 08/06/25

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2027 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Laith Clemente - Operations Technician I **Date Mixed:** 04-Aug-2025 **Balance:** 1128360905

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Catalog No. : 555224 **Lot No.:** A0228494

S13269 ↓ S13298 } RC1 08/06/25

Description : Custom 8270 Plus Standard #2

Custom 8270 Plus Standard #2 1,000µg/mL, Methylene Chloride, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : August 31, 2027 **Storage:** 10°C or colder

Ship: Ambient

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
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Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Laith Clemente - Operations Technician I **Date Mixed:** 04-Aug-2025 **Balance:** 1128360905

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Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

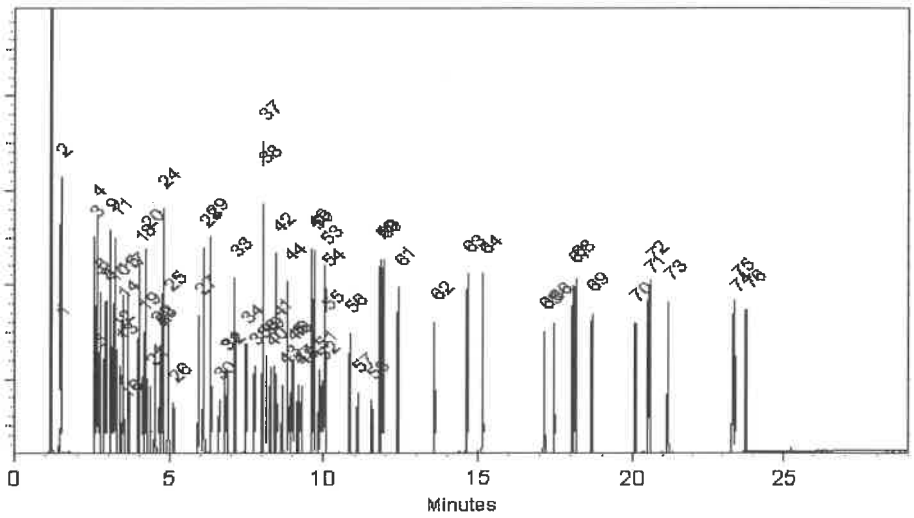
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

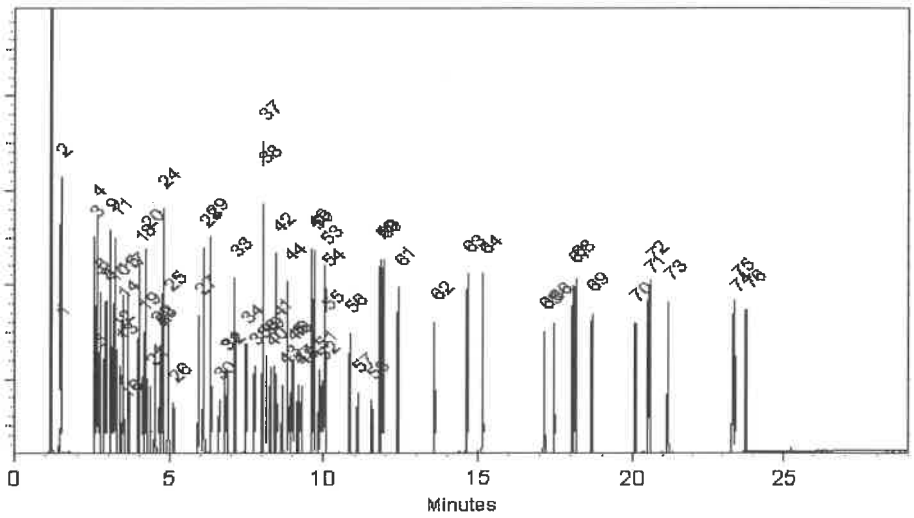
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

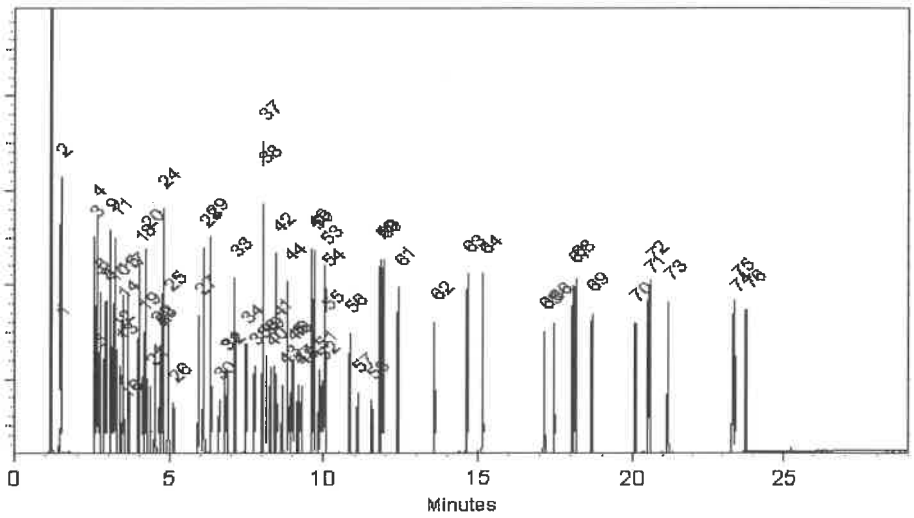
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

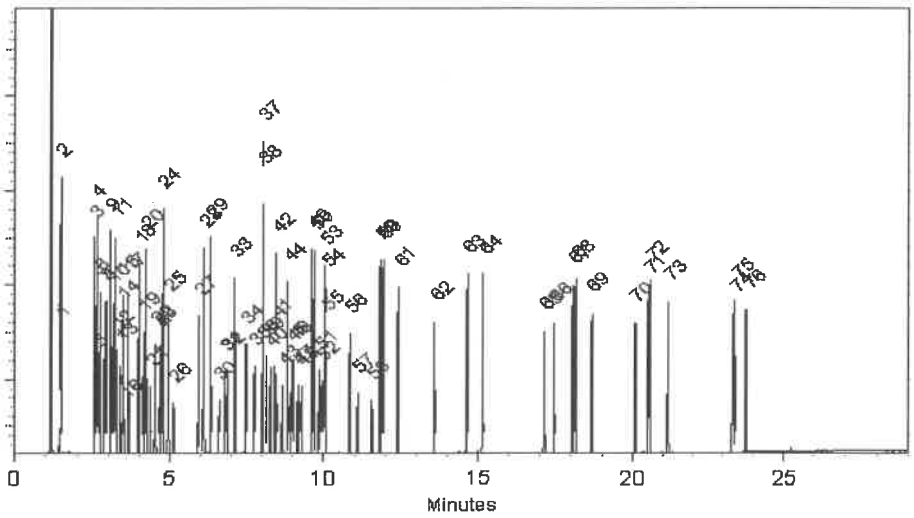
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

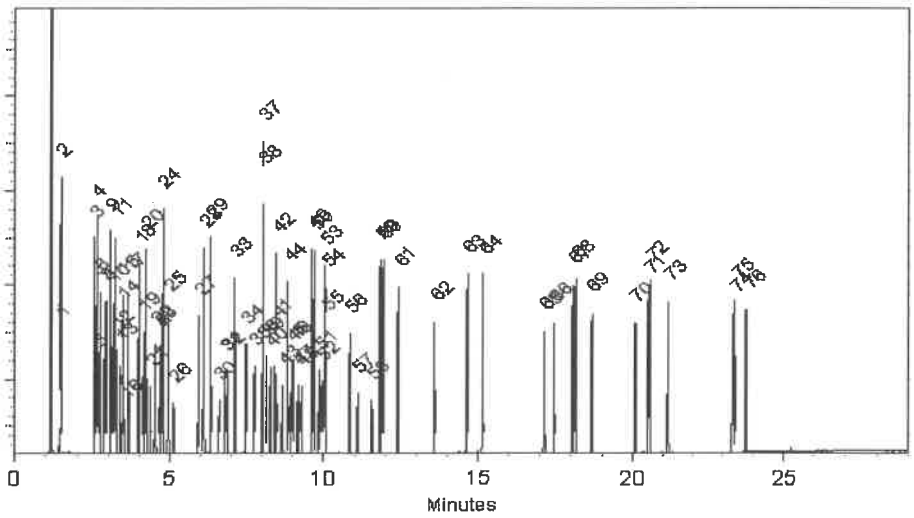
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

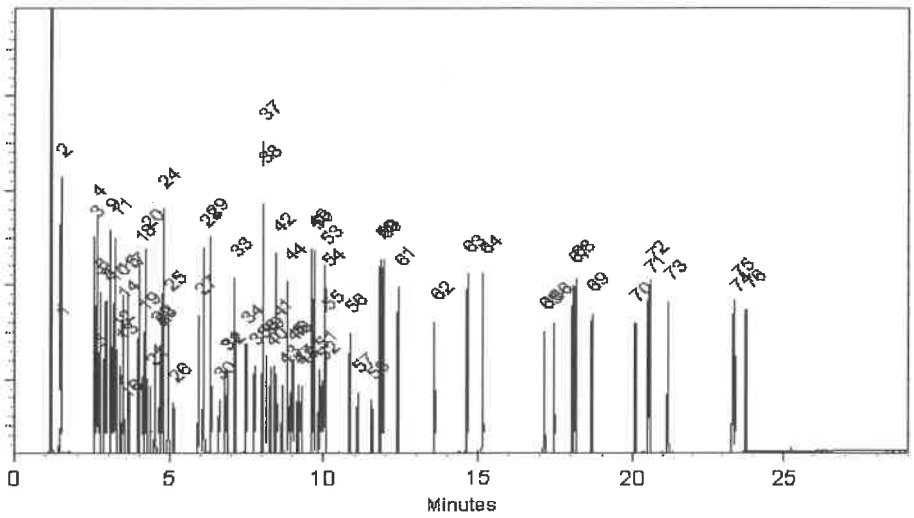
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

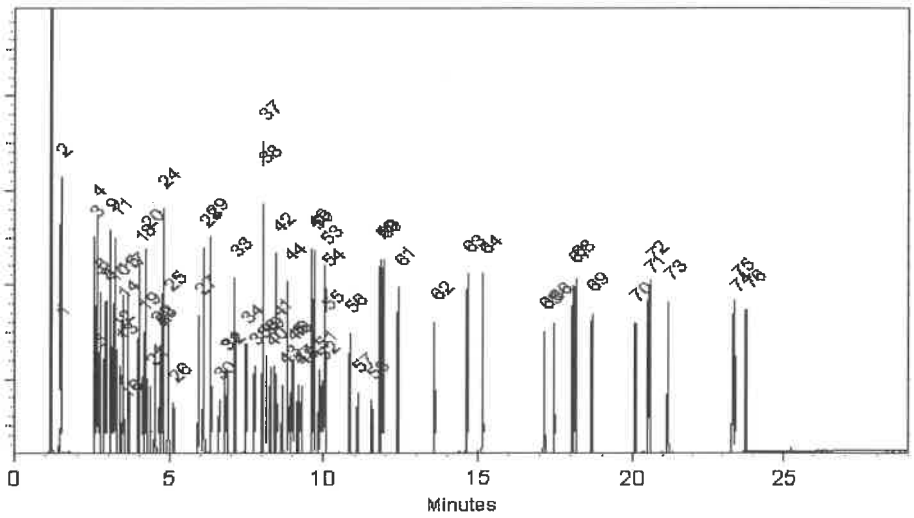
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

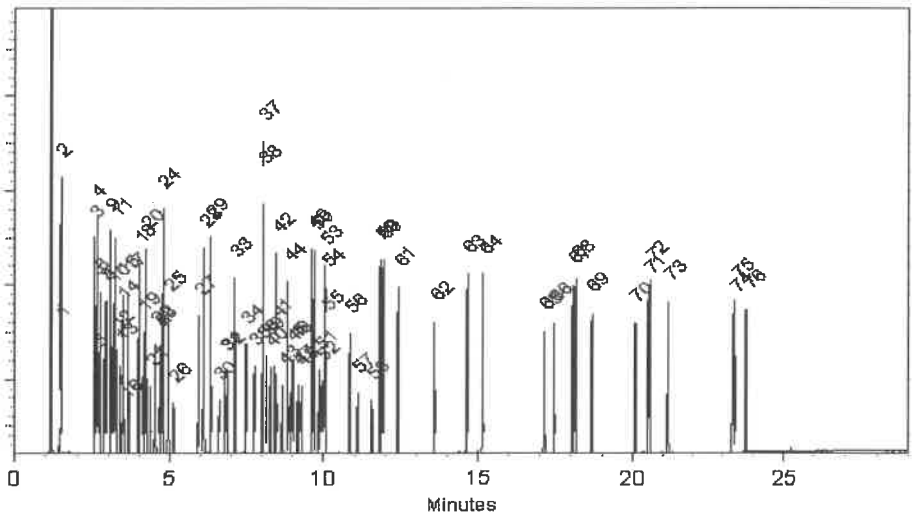
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

RESTEK
110 Benner Circle
Bellefonte, PA 16823-8812
Tel: 1-814-353-1300
Fax: 1-814-353-1309

www.restek.com

CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

chromatographic plus

ACCREDITED
ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ACCREDITED
ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 31850 **Lot No.:** A0229652

Description : 8270 MegaMix®

8270 MegaMix® 500-1000 µg/mL, Methylene Chloride, 1mL/ampul

S13299 ↓ S13328 RC 10/17/25

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : July 31, 2026 **Storage:** 0°C or colder

Handling: Sonication required. Mix is photosensitive. **Ship:** Ambient

CERTIFIED VALUES

Elution Order	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Pyridine	110-86-1	SHBR4811	99%	1,004.9 µg/mL	+/- 36.5621
2	N-Nitrosodimethylamine	62-75-9	S250717RSR	99%	1,004.5 µg/mL	+/- 36.5484
3	Phenol	108-95-2	MKCT5446	99%	1,003.5 µg/mL	+/- 36.5120
4	Aniline	62-53-3	X22F726	99%	1,004.8 µg/mL	+/- 36.5575
5	Bis(2-chloroethyl)ether	111-44-4	002891T24M	99%	1,003.6 µg/mL	+/- 36.5166
6	2-Chlorophenol	95-57-8	STBK4742	99%	1,004.5 µg/mL	+/- 36.5484
7	1,3-Dichlorobenzene	541-73-1	STBL1702	99%	1,003.8 µg/mL	+/- 36.5211
8	1,4-Dichlorobenzene	106-46-7	MKBS7929V	99%	1,003.8 µg/mL	+/- 36.5211
9	Benzyl alcohol	100-51-6	094986W07G	99%	1,003.8 µg/mL	+/- 36.5211
10	1,2-Dichlorobenzene	95-50-1	SHBR4446	99%	1,004.9 µg/mL	+/- 36.5621
11	2-Methylphenol (o-cresol)	95-48-7	SHBN7598	99%	1,004.3 µg/mL	+/- 36.5393
12	2,2'-oxybis(1-chloropropane)	108-60-1	RP250904RSR	99%	1,005.0 µg/mL	+/- 36.5666
13	3-Methylphenol (m-cresol)	108-39-4	STBL3873	99%	502.4 µg/mL	+/- 18.2788
14	4-Methylphenol (p-cresol)	106-44-5	SHBQ7653	99%	502.3 µg/mL	+/- 18.2742
15	N-Nitroso-di-n-propylamine	621-64-7	N63MG	99%	1,004.9 µg/mL	+/- 36.5621
16	Hexachloroethane	67-72-1	DAXRI	99%	1,003.9 µg/mL	+/- 36.5257
17	Nitrobenzene	98-95-3	10224044	99%	1,003.9 µg/mL	+/- 36.5257

18	Isophorone	78-59-1	MKCR3249	99%	1,004.8	µg/mL	+/- 36.5575
19	2-Nitrophenol	88-75-5	RP230710	99%	1,003.6	µg/mL	+/- 36.5166
20	2,4-Dimethylphenol	105-67-9	DIRAF	99%	1,004.1	µg/mL	+/- 36.5348
21	Bis(2-chloroethoxy)methane	111-91-1	15705100	99%	1,004.5	µg/mL	+/- 36.5484
22	2,4-Dichlorophenol	120-83-2	BCCK6969	99%	1,004.8	µg/mL	+/- 36.5575
23	1,2,4-Trichlorobenzene	120-82-1	SHBR1701	99%	1,004.0	µg/mL	+/- 36.5302
24	Naphthalene	91-20-3	STBL1057	99%	1,004.0	µg/mL	+/- 36.5302
25	4-Chloroaniline	106-47-8	BCCJ3217	99%	1,004.5	µg/mL	+/- 36.5484
26	Hexachlorobutadiene	87-68-3	X05J	98%	1,002.7	µg/mL	+/- 36.4816
27	4-Chloro-3-methylphenol	59-50-7	BCCK5906	99%	1,004.3	µg/mL	+/- 36.5393
28	2-Methylnaphthalene	91-57-6	STBL3028	99%	1,000.5	µg/mL	+/- 36.4029
29	1-Methylnaphthalene	90-12-0	5234.00-8	98%	1,000.0	µg/mL	+/- 36.3847
30	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	1,004.0	µg/mL	+/- 36.5302
31	2,4,6-Trichlorophenol	88-06-2	STBK8870	99%	1,003.5	µg/mL	+/- 36.5120
32	2,4,5-Trichlorophenol	95-95-4	3YFRE	97%	1,003.6	µg/mL	+/- 36.5152
33	2-Chloronaphthalene	91-58-7	RPN7O	99%	1,003.6	µg/mL	+/- 36.5166
34	2-Nitroaniline	88-74-4	RP250625RSR	99%	1,003.8	µg/mL	+/- 36.5211
35	1,4-Dinitrobenzene	100-25-4	RP250401RSR	99%	1,004.6	µg/mL	+/- 36.5530
36	Acenaphthylene	208-96-8	214935V18H	95%	1,000.4	µg/mL	+/- 36.3974
37	1,3-Dinitrobenzene	99-65-0	TRC3-1075941-2-1	99%	1,004.8	µg/mL	+/- 36.5575
38	Dimethylphthalate	131-11-3	358221L17K	99%	1,003.5	µg/mL	+/- 36.5120
39	2,6-Dinitrotoluene	606-20-2	BCCG1833	99%	1,004.6	µg/mL	+/- 36.5530
40	1,2-Dinitrobenzene	528-29-0	RP250203RSR	99%	1,002.6	µg/mL	+/- 36.4802
41	Acenaphthene	83-32-9	MKCV8166	99%	1,000.0	µg/mL	+/- 36.3847
42	3-Nitroaniline	99-09-2	RP240708RSR	99%	1,003.8	µg/mL	+/- 36.5211
43	2,4-Dinitrophenol	51-28-5	D240927RSR	99%	1,004.1	µg/mL	+/- 36.5348
44	Dibenzofuran	132-64-9	MKCW3845	99%	1,003.6	µg/mL	+/- 36.5166
45	2,4-Dinitrotoluene	121-14-2	102869V26E	99%	1,003.8	µg/mL	+/- 36.5211
46	4-Nitrophenol	100-02-7	20241120-1-AN	99%	1,003.0	µg/mL	+/- 36.4938
47	2,3,4,6-Tetrachlorophenol	58-90-2	PR-34476	99%	1,003.8	µg/mL	+/- 36.5211
48	2,3,5,6-Tetrachlorophenol	935-95-5	RP250724RSR	99%	1,003.1	µg/mL	+/- 36.4984
49	Fluorene	86-73-7	10246250	98%	1,002.9	µg/mL	+/- 36.4905
50	4-Chlorophenyl phenyl ether	7005-72-3	002531K02D	99%	1,004.3	µg/mL	+/- 36.5393
51	Diethylphthalate	84-66-2	223219R19C	99%	1,004.8	µg/mL	+/- 36.5575
52	4-Nitroaniline	100-01-6	RP240830RSR	99%	1,004.0	µg/mL	+/- 36.5302
53	4,6-Dinitro-2-methylphenol (Dinitro-o-cresol)	534-52-1	S250805RSR	99%	1,004.8	µg/mL	+/- 36.5575

54	Diphenylamine	122-39-4	MKCT1512	99%	1,004.9	µg/mL	+/- 36.5621
55	Azobenzene	103-33-3	BCCL3292	99%	1,003.9	µg/mL	+/- 36.5257
56	4-Bromophenyl phenyl ether	101-55-3	STBH6361	99%	1,003.9	µg/mL	+/- 36.5257
57	Hexachlorobenzene	118-74-1	16302300	99%	1,004.5	µg/mL	+/- 36.5484
58	Pentachlorophenol	87-86-5	RP240411RSR	99%	1,004.9	µg/mL	+/- 36.5621
59	Phenanthrene	85-01-8	MKCV8193	99%	1,003.8	µg/mL	+/- 36.5211
60	Anthracene	120-12-7	MKCW9141	99%	1,003.3	µg/mL	+/- 36.5029
61	Carbazole	86-74-8	15821400	99%	1,003.1	µg/mL	+/- 36.4984
62	Di-n-butylphthalate	84-74-2	MKCN4337	99%	1,004.6	µg/mL	+/- 36.5530
63	Fluoranthene	206-44-0	A0458721	99%	1,004.8	µg/mL	+/- 36.5575
64	Pyrene	129-00-0	BCCL8032	99%	1,003.8	µg/mL	+/- 36.5211
65	Benzyl butyl phthalate	85-68-7	X12I018	99%	1,004.9	µg/mL	+/- 36.5621
66	Bis(2-ethylhexyl)adipate	103-23-1	MKCM1988	99%	1,003.4	µg/mL	+/- 36.5075
67	Benz(a)anthracene	56-55-3	I80012022BAA	99%	1,004.3	µg/mL	+/- 36.5393
68	Chrysene	218-01-9	RP250815RSR	99%	1,003.9	µg/mL	+/- 36.5257
69	Bis(2-ethylhexyl)phthalate	117-81-7	MKCS8065	99%	1,004.5	µg/mL	+/- 36.5484
70	Di-n-octyl phthalate	117-84-0	16197600	99%	1,004.4	µg/mL	+/- 36.5439
71	Benzo(b)fluoranthene	205-99-2	0225BF	99%	1,005.4	µg/mL	+/- 36.5803
72	Benzo(k)fluoranthene	207-08-9	012022K	99%	1,004.5	µg/mL	+/- 36.5484
73	Benzo(a)pyrene	50-32-8	NQLXA	98%	1,002.4	µg/mL	+/- 36.4726
74	Indeno(1,2,3-cd)pyrene	193-39-5	17-YMK-40-2	99%	1,004.0	µg/mL	+/- 36.5302
75	Dibenz(a,h)anthracene	53-70-3	712215450-1-1	99%	1,003.5	µg/mL	+/- 36.5120
76	Benzo(g,h,i)perylene	191-24-2	RP250501RSR	98%	1,003.0	µg/mL	+/- 36.4949

* Expanded Uncertainty displayed in same units as Grav. Conc.

Solvent: Methylene chloride
CAS # 75-09-2
Purity 99%

Tech Tips:
N-Nitrosodiphenylamine (86-30-6) is prone to breakdown in the injection port and will be converted to Diphenylamine (122-39-4). When comparing the response of Diphenylamine to mixtures manufactured using N-Nitrosodiphenylamine, a difference in response will be observed. The ratio of the MW can be used to calculate the theoretical concentration of the N-Nitrosodiphenylamine.

Quality Confirmation Test

Column:
30m x 0.25mm x 0.25µm
Rtx-5 (cat.#10223)

Carrier Gas:
hydrogen-constant flow 1.8 mL/min.

Temp. Program:
80°C (hold 0.1 min.) to 330°C
@ 9.6°C/min. (hold 2.86 min.)

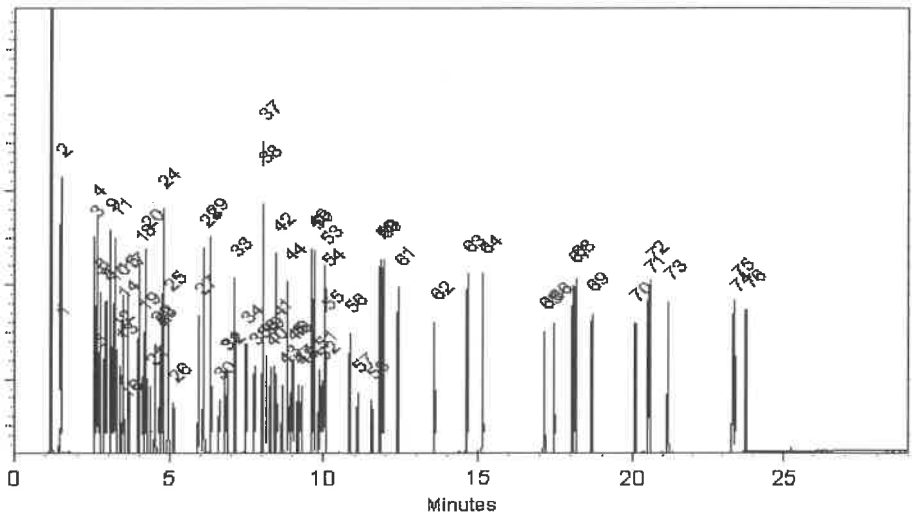
Inj. Temp:
250°C

Det. Temp:
340°C

Det. Type:
FID

Split Vent:
100 ml/min.

Inj. Vol
1µl



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

Dakota Parson - Operations Technician I

Date Mixed: 04-Sep-2025 **Balance Serial #** B345965662

Brittany Federinko - Operations Tech II

Date Passed: 15-Sep-2025

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397

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Fax: 1-814-353-1309

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CERTIFIED REFERENCE MATERIAL

Certificate of Analysis

gravimetric

ISO 17034 Accredited
Reference Material Producer
Certificate #3222.01

ISO/IEC 17025 Accredited
Testing Laboratory
Certificate #3222.02

FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.

Catalog No. : 555869 **Lot No.:** A0201702

Description : Custom Hexachlorocyclopentadiene Standard

Custom Hexachlorocyclopentadiene Standard 25,000µg/mL, Methanol, 1mL/ampul

Container Size : 2 mL **Pkg Amt:** > 1 mL

Expiration Date : September 30, 2026 **Storage:** 10°C or colder

Ship: Ambient

513148
↓
513157
RC
11/13/23

CERTIFIED VALUES

Component #	Compound	CAS #	Lot #	Purity	Grav. Conc. (weight/volume)	Expanded Uncertainty * (95% C.L.; K=2)
1	Hexachlorocyclopentadiene	77-47-4	099063P13G	99%	25,244.0 µg/mL	+/- 450.6896

Solvent: Methanol
CAS # 67-56-1
Purity 99%

Brittany Federinko - Operations Tech I

Date Mixed: 05-Sep-2023 **Balance:** B707717271

Manufactured under Restek's ISO 9001:2015 Registered Quality System Certificate #FM 80397